

AMERICAN GAS ASSOCIATION MONTHLY

NOVEMBER • 1935

Optimism Prevails at Convention

•

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A Challenge to the Gas Industry

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AMERICAN GAS ASSOCIATION

**420 Lexington Avenue
New York, N. Y.**

AMERICAN GAS ASSOCIATION MONTHLY

Contents for November 1935

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L B. DENNING, new president of the American Gas Association, is president of the Lone Star Gas Corporation. He was born near Greensburg, Indiana. As a boy he knew the hardships that go with life on a small farm. In early boyhood he went to Cincinnati where he entered the railroad service.

While a railroad workman he studied law at night, and was admitted to the bar at Columbus, Ohio, in 1899. He started practice in a small town in southern Ohio, and became associated with natural gas interests as attorney in 1902. In 1910 he became general counsel for the Ohio Fuel Supply Company, and in 1918 was vice-president of this company in charge of distribution. Later he became vice-president and general manager of Fayette County Gas Company, operating in western Pennsylvania; and then secretary and treasurer of Northwest

ern Ohio Natural Gas Company, owning pipe lines supplying Toledo, Ohio. For several years he was secretary and treasurer of Tropical Oil Company and assistant secretary and treasurer of Penn-Mex Fuel Company.

In 1921 he was made president of the Natural Gas Association of America. He was a member of the National Committee on Natural Gas Conservation during the administration of President Wilson.

A member of the first Board of Directors of Lone Star Gas Company, he has served as director since its organization. In May, 1915, he was elected president of Lone Star Gas Company and has served in that capacity continuously to the present time. Mr. Denning's contact with the natural gas business covers a period of over thirty years in most of the natural gas producing areas of the country.

AMERICAN GAS ASSOCIATION MONTHLY

James M. Beall, Editor

Aggressive Optimism Prevails at Chicago

CHARACTERIZED by unmistakable optimism and a readiness to embark on new and aggressive enterprises to promote the gas load, the Association's seventeenth annual convention which concluded its deliberations in Chicago, October 17, was a marked success. The registered attendance was 2,000 and many hundreds more were present who did not register. Not only was this an unexpectedly large attendance in view of the absence of a manufacturers' exhibit, but the large numbers present at all sectional and departmental meetings was considered a gratifying achievement.

Many viewed the increased attendance as a definite indication that the industry was now aroused and ready to go places. It was generally conceded that the time is ripe for the industry to take a definite stand in combatting increasingly severe competition and that conditions are favorable for action on all fronts. This attitude, combined with a confidence in the fundamental resources of the industry, was prevalent throughout the meeting.

Perhaps the outstanding single event which excited most favorable comment was the address of James F. Pollard at the second general session, in which he launched a plea from the Pacific Coast for a national advertising campaign under the auspices of the American Gas Association. Given a place on the program at the last moment, Mr. Pollard pre-

sented his story with force, interest and humor, backing it with factual data of all kinds, including many examples of advertising, both local and national, competitive and non-competitive. He received a spontaneous and enthusiastic reception and the general impression prevailed that the

road to effective national advertising had at last been pointed out and that the gas industry would soon be on its way.

The convention officially opened with the meeting of the Natural Gas Department, Monday afternoon, October 14. In his opening address John B. Tonkin, of the Peoples Natural Gas Company, Pittsburgh, chairman of the department, gave assurance of an ample supply of natural gas for many years to come. Pointing to the conservation of natural gas which has been due to the continued efforts of many organizations, including the Association, Mr. Tonkin contrasted this policy with the former practice of wasting natural gas by blowing it into the air. Construction of long distance pipe lines to carry gas to populous industrial centers that offer a market for it was given a large share of the credit for its conservation.

Following a report of the Main Technical and Research Committee by H. C. Cooper, of the Hope Natural Gas Company, in which the important work of that committee was outlined, problems of taxation and legislation formed the main topic of discussion.

"The federal judiciary is our last bulwark of liberty," said George A. Lee, vice-president and general counsel of the Northern Natural Gas Company, Lincoln, Nebraska, after citing the volume of hampering and

New Officers

President—L. B. Denning, president, Lone Star Gas Company, Dallas, Texas.

Vice-Presidents—Herman Russell, president, Rochester Gas & Electric Corp., Rochester, N. Y.; N. C. McGowen, president, United Gas Public Service Co., Houston, Texas.

Treasurer—J. F. Rooney, assistant to vice-president, Consolidated Gas Co. of New York, New York, N. Y.

Directors—Two-Year Terms:

Walter C. Beckjord, vice-president and general manager, Columbia Gas & Electric Corp., Pittsburgh, Pa.; H. O. Caster, member executive committee, Cities Service Co., New York, N. Y.; Chas. M. Cohn, vice-president, Consolidated Gas Electric Light & Power Co., Baltimore, Md.; H. C. Cooper, president and general manager, Hope Natural Gas Co., Pittsburgh, Pa.; J. S. DeHart, Jr., president, Isbell-Porter Co., Newark, N. J.; George S. Hawley, president, Bridgeport Gas Light Co., Bridgeport, Conn.; C. W. Hunter, vice-president, United Engineers and Constructors, Inc., Philadelphia, Pa.; Conrad N. Lauer, president, The Philadelphia Gas Works Co., Philadelphia, Pa.; B. J. Mullaney, vice-president, The Peoples Gas Light & Coke Co., Chicago, Ill.

restrictive and 'nuisance' legislation and taxation which has been imposed on the gas industry.

"There have been attempts to popularize this legislation and taxation on the basis that it would hit the 'big corporations' and would not affect the small consumer," Mr. Lee said. "The fact is that the only revenues the utility company gets are from its general customers, and the percentage of revenue represented by taxes has increased from 9 per cent in 1929 to 15 per cent in 1934. In levying taxes on the public utilities, our governmental bodies are levying taxes on the customers of the utilities."

Deploring the lack of uniformity among engineers as to methods employed in making valuations, Judge R. D. Garver, chief counsel of The Gas Service Company, Kansas City, in an address on "Unit Costs in Utility Valuation," recommended that some "standard be established which will be recognized by the engineering profession and which a reputable engineer will not dare disregard."

Calling attention to the wide variation frequently met in figures presented by company engineers and those employed by commissions in rate litigation, Judge Garver said, "I believe few companies and few contractors have definite knowledge of what their several operations cost.



President Young, right, congratulates President-Elect Denning

They can approximate the total, but as to how that total is made up, they are woefully ignorant. This ignorance permits engineers whose efforts are pointed toward a desired conclusion to justify such conclusions. Why not make these facts a matter of record—a matter of such unimpeachable record as cannot be the subject of question by adversaries?"

The meeting of the Natural Gas Department concluded with a vigorous discussion of the subject "Building the Natural Gas Load," led by Walter C. Beckjord, of the

Columbia Gas and Electric Corporation, Pittsburgh.

Speaking before the first general session, Percy S. Young, president of the Association, emphasized the importance of the gas industry to the nation's economic life and the unfailing confidence the industry has in the future of the country. Warnings that high taxation is a growing problem and that the industry should take its stand against increased governmental spending "and especially against spending for competitive enterprises and unproductive and wasteful objects," were sounded by Mr. Young. A major portion of his address is reproduced elsewhere in this issue of THE MONTHLY.

Industry Records Gains

That the gas industry is forging ahead in spite of several unfavorable factors was borne out by the figures quoted in the report of Major Alexander Forward, managing director of the Association. "For the first seven months of 1935, the natural gas industry shows plus marks in every item," Major Forward stated. "The total sales of natural gas are 8.6 per cent above the same months of 1934 and this includes increases of 6.3 per cent in domestic sales, including house heating, 10.3 per cent in commercial sales and 9.7 per cent in industrial sales. These increases are not the result of

New Chairmen

NATURAL GAS DEPARTMENT: Chairman—Wm. Moeller, Jr., vice-president, Southern California Gas Co., Los Angeles, Calif.; Vice-Chairman—George E. Welker, president, United Natural Gas Co., Oil City, Pa.

ACCOUNTING SECTION: Chairman—F. L. Griffith, vice-president, The Peoples Gas Light & Coke Co., Chicago, Ill.; Vice-Chairman—E. J. Tucker, assistant general manager and secretary, Consumers Gas Co. of Toronto, Toronto, Ont., Canada.

COMMERCIAL SECTION: Chairman—C. E. Bennett, president, Binghamton Gas Works, Binghamton, N. Y.; Vice-Chairman—F. M. Banks, vice-president, Southern California Gas Co., Los Angeles, Calif.

INDUSTRIAL GAS SECTION: Chairman—C. W. Gale, new business manager, Knoxville Gas Co., Knoxville, Tenn.; Vice-Chairman—Ralph L. Manier, industrial heating engineer, The Syracuse Lighting Co., Inc., Syracuse, N. Y.

MANUFACTURERS' SECTION: Chairman—John A. Fry, president, Detroit-Michigan Stove Co., Detroit, Mich.; Vice-Chairman, Apparatus Division—Merrill N. Davis, vice-president in charge of sales, S. R. Dresser Manufacturing Co., Bradford, Pa.; Vice-Chairman, Appliance Division—J. Scott Fowler, president, Lovekin Water Heater Co., Philadelphia, Pa.

TECHNICAL SECTION: Chairman—F. A. Lydecker, general superintendent of gas distribution, Public Service Electric & Gas Co., Newark, N. J.; Vice-Chairman—Martin I. Mix, superintendent of distribution, The Peoples Gas Light & Coke Co., Chicago, Ill.

PUBLICITY AND ADVERTISING COMMITTEE: Chairman—Henry Obermeyer, assistant to vice-president, Consolidated Gas Co. of New York, New York, N. Y.

changes from manufactured gas to natural gas or mixed gas which have been allowed for. Operating revenue, though affected by lower rates, is also increasing, but this is not true of net revenue, burdened by intolerable taxation. The number of natural gas customers is well up including a gain of 3.2 per cent in domestic, including house heating, 4.5 per cent in commercial, 15 per cent in industrial, and a total of 3.3 per cent more customers than a year ago.

"The manufactured gas industry is also in excellent condition and the

business of 1934 and 1935 shows smaller losses from that of 1929 than almost any other major American industry. Manufactured gas sales for the first seven months of 1935 have increased 2.7 per cent over the same period in the past year. Sales of manufactured gas for house heating are up 29.2 per cent, while industrial and commercial sales are up 9 per cent. Operating revenues continue on about the same basis.

"Bringing the figures right down to date, gas send-out for the month of September 1935 in a representa-

tive group of the larger companies, showed an increase of 3.62 per cent over September, 1934.

"It is also significant that sales of gas ranges for the first eight months of 1935 have increased 30.2 per cent over the sales in the same period of 1934, and this on top of the gain of 26 per cent in 1934 over the corresponding period in 1933. It is well worth noting that though sales have increased this year 30.2 per cent, the sales of gas ranges with oven heat control, meaning the higher grades, have increased 45 per cent so that most of the great advance we are making in the sales of appliances is in the better grades.

"During the first six months of 1935 gas refrigerator sales increased 50 per cent while the sales of the automatic refrigerator which is our nearest competitor increased 10 per cent."

Accidents Reduced

A reduction of 75 per cent in accidental deaths from carbon monoxide, following education of gas company emergency squads, and police and fire department resuscitation crews in modern methods of artificial respiration, was reported by Dr. Cecil K. Drinker, dean of the Harvard University School of Public Health.

Concerning nervous ailments supposedly induced by exposure to carbon monoxide poisoning, Dr. Drinker said that of 21,000 cases covering a period of 10 years, only nine people had failed to recover from the effects of exposure.

"The gas industry deserves the highest congratulations for having done everything humanly possible to reduce accidental deaths, and the reduction has been impressive," Dr. Drinker concluded.

The report of W. E. Hughes, chairman of the Association's Accident Prevention Committee, stated that an increase in employee accidents during 1934, the first year that the downward trend had been reversed, was due to the increase in employment from 119,000 in 1933 to 129,000 in 1934 following cooperation with NRA.

Employment in the gas industry increased from 119,000 in 1933 to 130,000 as of September 30 of this

Outline of Entertainment Features

President's Reception and Dance

Grand Ball Room, Palmer House
October 15

The President's reception started at 9:15 P.M. with the following officers in the receiving line under an inspiring group of American flags on the north side of the Grand Ball Room: President P. S. Young and Mrs. Young, Vice-President L. B. Denning and Mrs. Denning, former President H. O. Caster, Miss Virginia Forward, Treasurer J. F. Rooney, and Managing Director Alexander Forward.

Donald McDonald acted as Official Introducer, ably assisted by J. D. Creveling. A continuous line of members, guests and their wives, paid their compliments to those in the receiving line until 10:00 o'clock when the dancing started.

Music was furnished by Ben Pollack and his versatile crew of instrumentalists, featuring Dorris Robbins, known as the "Angel of the Air."

During the evening Baron and Blair known as "Society's Favorite Dance Team," entertained those present by presenting several numbers on the dance floor.

As the dance floor was still crowded when dancing was discontinued at 1:00 A.M., it emphasized the fact that everybody had spent a very enjoyable evening.

Ladies' Luncheon and Bridge

At 12:15 P.M., October 16, the ladies left the Wabash Avenue entrance of the Palmer House by buses, for the Edgewater Beach Hotel where 277 sat down to a very enjoyable luncheon in the famous Marine Dining Room at 1:00 P.M.

During the luncheon Herbert Foote gave the ladies a recital on the organ that is heard over the air every day.

At 2:15 the ladies adjourned to the East Lounge, overlooking Lake Michigan, where they played cards, and after receiving their souvenirs they returned to the Palmer House.

Entertainment and Dance

Grand Ball Room, Palmer House
October 16

At 9:00 P.M. all the seats on the main floor and in the balcony were occupied and only standing room was available, in fact some of those present had been occupying their seats from 7:15 on, so as to be sure of seats where they could have an unobstructed view of the entertainment features.

Music was furnished by the nationally known orchestra conducted by Ted Weems who featured:

Gene Glennan	Tenor Soloist
Country Washburn	Hill Billy Singers
J. E. McHargue	
E. J. Engle	Novelty Singer
Parker Gibbs	Hot Singer
Elmo Tanner	Whistler

The balance of the entertainment was furnished by the following outstanding stars:

Ethel Shutta	Inimitable Star
Marjorie Gillman	Chicago Grand Opera
Eddy Peabody	"Musical Dynamite"
Pat Kennedy	N. B. C. Irish Tenor
Bliss, Lewis and Ash	Dancing Specialists
The Sherman Jigs	

Musical and Dancing Specialists

Due to the outburst of applause after each feature the entertainers presented so many additional numbers that the floor could not be cleared until 10:50 P.M.

At 11:00 P.M. dancing started and after two hours of the delightful music furnished by Ted Weems' orchestra the crowd left at 1:00 A.M., voicing their appreciation of the efforts of the American Gas Association in providing them with the various entertainment features during the convention.

Entertainment functions were arranged by a committee under the chairmanship of C. A. Luther of The Peoples Gas Light and Coke Company, Chicago.



Representatives of winning gas companies in the nation-wide refrigerator sales contest who received their trophies at the convention. The "cup bearers" from left to right are: W. A. Hudson, Birmingham Gas Company; J. L. Johnson, Providence Gas Company; Paul R. Johnson, Union Gas System, Inc.; H. R. Cloud, Florida Public Service Company; Ronald L. Simms, Tyler Gas Service Company; and John J. Quinn, Boston Consolidated Gas Company

year, it was revealed. Although NRA codes for the industry were not formally approved, virtually all gas utility companies cooperated with the drive for more employment and shorter hours of labor.

Appearing on the general sessions program as a representative of the Technical Section, L. J. Willien, of the Byllesby Engineering and Management Corporation, Chicago, presented a summary of a carefully prepared paper reviewing all recognized gas making processes for peak loads. The review included not only the standard processes but also butane and its various ramifications and the established processes of making gas from oil, both those of standards that prevail in manufactured gas territories as well as high B.t.u. gases.

Defends Private Enterprise

The high light of the second general session, Wednesday morning, October 16, was the speech of Harper Sibley, president of the United States Chamber of Commerce, in which he vigorously defended private ownership and operation of public utilities.

"Where would the gas industry be today if government had taken it over thirty years ago?" Mr. Sib-

ley asked. "I venture to say that it would be right up front among the 'horse and buggy' enterprises. The fact that your business is larger than ever before in its history, and that it is moving ahead with confidence is, in my judgment, directly attributable to the fact that your industry has been predominantly owned and conducted by private individuals. If American society is to have the benefit of continued progress in its utilities they must not be turned over to political direction. Competition, which is the stimulation to invention, which in turn is the means of progress, does not thrive in a political atmosphere.

"I do not deny that some municipal governments own and operate gas plants honestly and efficiently—but history and experience both teach us that, in the long run and in the main, you cannot get economic and efficient results in the administration of a business as technical, as extensive, and as intricate as the gas business, when it is politically administered. The reason is 'human nature' and is perfectly obvious—the politician who dominates the municipal gas plant is not in most instances willing to sacrifice his personal advantage for the benefit of the utility, and his political party relation-

ships completely submerge the business and economic aspects of low prices and good service which should be the real objectives of a utility. Speaking bluntly, the utility as an agency for public service becomes secondary to the maintenance of political office and political organization.

"There are also the political and social implications which come from placing under political domination utilities, like our gas and electric utilities, with vast organizations and great numbers of personnel. When one realizes the highly technical process required to produce gas, to maintain all the equipment, and the infinite number of details in its distribution, it seems that for government to insist it be given political direction of such a business is perverting the proper province of that government. It is moving our utilities in the direction of inefficiency and corruption.

"I am sure this organization is familiar with the Chamber's position, of long standing and consistently maintained, that the best contribution to the public interest in the conduct of our public utilities can be obtained under the American system of private operation with adequate regulation under continuing bodies in the form of state commissions. The Chamber is unalterably opposed to the entry of any government into the gas and electric utility fields,—whether it be the great federal government going di-



John Normile, of Better Homes and Gardens, who spoke before the home service meeting, Tuesday afternoon, October 15

rectly into electric competition with your industry in the Tennessee Valley, or a government subsidized gas pipe line from Texas to the Lake States, or a small municipal plant aided by federal funds.

"Most of you had a very real interest in the legislation introduced at the last session of Congress to regulate holding companies and interstate commerce in electricity and gas. At

HERMAN RUSSELL



Herman Russell

Herman Russell, who has been elected a vice-president of the Association, is president of The Rochester Gas and Electric Corporation. He has devoted practically all of

his professional and business career to the gas and electric public utility industries.

Following his graduation from the University of Michigan in 1898, he took up post graduate work in Chemical and Gas Engineering, receiving a Master's Degree in 1900, and winning the first scholarship established by the Michigan Gas Association.

Upon completion of his graduate work Mr. Russell entered the employ of the Detroit Gas Company, becoming assistant superintendent in 1902. From Detroit he went to San Francisco in 1903 as superintendent of gas manufacturing. From San Francisco he went to Cincinnati as assistant superintendent of gas manufacturing in 1904.

In 1905 Mr. Russell became assistant superintendent of the gas works of the Rochester Railway and Light Company, and has remained with that company and its successor, The Rochester Gas and Electric Corporation, continuously up to the present time. He was made superintendent of gas manufacturing in 1906, assistant general manager in 1914, general manager in 1919, vice-president and director in 1922, and president, director and general manager in 1929.

Mr. Russell is a member of numerous civic and business organizations as well as the American Gas Association, Edison Electric Institute and The Empire State Gas and Electric Association.

its annual meeting last May the membership of the Chamber passed a resolution opposing death sentence legislation for holding companies and declaring that legislation should go only to the extent of adequate regulation, and further that federal regulation should not invade the field of state regulation of operating companies. Although the legislation at which it was aimed became law there is still grave question as to its legality and its practicability and wisdom. The battle may not be lost.

"The history of your industry is a good illustration of the advantage to the public of keeping management in the hands of individuals personally interested in the success of their enterprise. Besides the cold dollars and cents advantages to the public there are the other advantages of the development of high citizenship through the responsibility which each individual feels in his industry, in the incentive to invention and progress, and in the freedom from the demoralizing influences that come with the struggle for political preferment and tenure of office," Mr. Sibley concluded.

Presentation of Awards

A feature of this session, was the presentation of awards for distinctive and notable contributions to the gas industry. Frank L. Hallock, director of the public contact division of the Consolidated Gas Company of New York, received the Charles A. Munroe Award, generally considered to be the highest within the power of the Association to grant, for "developing a practical and relatively inexpensive method of raising the level of human service rendered by public utility companies." S. S. Tomkins, assistant chief chemist of the Consolidated Gas Company of New York received the Beal Medal for the most important technical paper delivered at Association meetings during the year.

Also presented at this session were seven silver trophies, designated as "Prosperity Cups," to gas companies who gained first place in a nation-wide gas refrigeration campaign last spring. The trophies were presented to representatives of the winning companies by Floyd M. Rosenkrans, chairman of the Commercial Section.

N. C. MCGOWEN



N. C. McGowen

N. C. McGowen, newly elected vice-president of the Association, is president of the United Gas Public Service Company, Houston, Texas.

Mr. McGowen has been prominent in the natural gas industry in the southwest for many years. His record as a producer of natural gas and as a business man is high in the industry. He took a leading part in the development of the great natural gas fields of Louisiana and in promoting the interests of the Natural Gas Association of America.

After the amalgamation of the Natural Gas Association of America and the American Gas Association, Mr. McGowen served as the first chairman of the Natural Gas Department. At that time he was vice-president of the Palmer Corporation, operating in Louisiana. After the organization of the United Gas Public Service Company, he was transferred to Houston, as president of that organization, retaining his residence in Shreveport.

He has been a leader in civic affairs in his city and is identified with a number of large industrial enterprises outside the industry.

Conservation of natural gas has been consistently advocated by Mr. McGowen.

Winners of the "Prosperity Cups" and the delegates who received the trophies on behalf of their companies were: John J. Quinn, Boston Consolidated Gas Company, Boston, Mass.; J. L. Johnson, Providence Gas Company, Providence, R. I.; W. A. Hudson, Birmingham Gas Company, Birmingham, Ala.; Paul R. Johnson, Union Gas System, Inc., Independence, Kansas; H. R. Cloud, Florida Public Service Company, Orlando, Fla.; Ronald L. Simms, Tyler Gas Service Company, Tyler, Texas, and B. W. Garvin, Broad River Power Company, Florence, S. C.

Summarizing the work of the Rate Structure Committee, H. H. Agee, chairman, declared that any solution of the problem of increasing sales under present competitive conditions

New Directors Elected at Convention



W. C. Beckjord



H. O. Caster



Charles M. Cohn



H. C. Cooper



J. S. DeHart, Jr.



George S. Hawley



C. W. Hunter



Conrad N. Lauer



B. J. Mullaney

requires a study of potential business available at various prices and the appropriateness of present rates. "It will be evident in some cases," he said, "from such a study that the present level of rates does not meet the existing competitive conditions and that a more extended use of promotional rates is necessary."

"The present trend," Mr. Agee brought out, "is to avoid separate rates for special domestic uses and towards the adoption of residential gas schedules, or domestic schedules restricted in their application by the requirement of certain specific uses under them." Another important trend, reported by Mr. Agee has been toward the simplification of rates, making them more understandable to the customer.

Other speakers at the second general session were J. F. Quinn, of The Brooklyn Union Gas Co., C. A. Harrison, of Cities Service Company, New York and George N. Wallace, sales promotion consultant for the American Gas and Power Company, who described the remarkable sales record of the Minneapolis Gas Light Company. Mr. Harrison, retiring chairman of the Technical Section, reviewed the several papers presented at the Technical Section meeting dis-

cussing the utilization of all employees in selling gas and appliances. Mr. Quinn spoke on "Extending Commercial Business."

Ceremonies marking the tenth anniversary of the founding of the Testing Laboratory of the American Gas Association were a high light of the concluding general session, Thursday morning, October 17. The history of the Laboratory has been cited as an example of self-regulation of industry without governmental coercion, George E. Whitwell, vice-president of the Philadelphia Electric Company and a member of the Laboratory's Managing Committee, told the delegates.

"Starting from scratch ten years ago, the Laboratory now tests and approves more than 93 per cent of the two million new gas appliances sold yearly,"

Mr. Whitwell said. "The public is thus assured that the eighty million dollars it spends annually on appliances are well spent—that they are getting safe, efficient and durable equipment."

One of the most valuable accomplishments of the Laboratory program, according to A. F. Bridge, of Los Angeles, who spoke principally on the Pacific Coast branch, "has been to bring the eastern and western sections of our country more closely in accord in the matter of gas utilization practices." Mr. Bridge was followed by John A. Fry, president of the Detroit-Michigan Stove Company, who described the testing activities of the Laboratory as of inestimable value to the manufacturers.

At this point a short talk was delivered by electrical transcription by the Mystery Chef, the central figure in a radio program about to begin under the sponsorship of gas companies representing approximately 80 per cent of the domestic gas meters on the eastern seaboard. Joining forces in a common effort to promote the gas cooking load, these companies will present the Mystery Chef twice a week over a

1936 Convention To Be Held in Atlantic City

The fullest consideration having been given to all factors involved, the Committee on Time and Place recommended that the Eighteenth Annual Convention of the Association be held in Atlantic City the week of October 12, 1936. The recommendation was adopted by the convention.

(Continued on page 425)

Serving the Gas Industry



P. S. Young

THE American Gas Association has, I believe, a clear conception of its obligation to its members, and to the public whom they serve, to conduct its affairs at all times in accordance with the

best traditions of the industry and the highest standard of business ethics. The Association takes pride in its record. It is keenly concerned with its present service to its members and with all plans for the development of their business which it can be instrumental in furthering and bringing to fruition.

The business world is subject to the challenge of its serviceability at all times. It must necessarily be actuated by the "profit motive." Without such incentive economic advancement has never been long continued. It is elementary to say that without profit business cannot be conducted and, also, that without service being given in a free market business, as we know it today, would not make progress or even exist. I mention this as there seems to be more or less failure to grasp this simple economic fact at this time. Perhaps it is no wonder that this is so when we are faced with so many unsound experimental and economically bewildering measures affecting our national economy.

New Chapter of Regulation

The drive for utility control and domination by the Federal Government during this year has fortunately fallen short of directly stopping energetic development of sales. There are no explicit restrictions on commercial activities in the Public Utility Act of 1935. The Act opens a new chapter of regulation. The issue of its constitutionality has already been raised in the courts. Whatever the result of such litigation may be, it is to

By P. S. YOUNG

President, American Gas Association

be hoped that the responsibility conferred upon those appointed to carry out its provisions will lead to a broad and constructive approach to the many problems raised by its enactment.

Emphasis during this year just passed has been placed by your Board of Directors in the activities of your Association upon increasing the market for gas. The position of the gas industry in the furnishing of a heat source is fundamentally sound. Gas has advantages over competitive sources which it is necessary to continually foster and bring to public attention. Your Association feels that in this respect there is an opportunity to strengthen the hold that gas has as a fuel by cooperation in planning major activities and by combination of effort in broadening the market for gas in every sphere of its utilization.

Importance of Rates

Your Association has been active in advocating advanced methods of charging. Rates that promote business and that have a practical relation to incremental costs besides giving consideration to the value of the service, measured both by comparative and competitive standards, are being recognized and advocated as advantageous to both company and consumer. Rates have an influence on costs, as have costs on rates. To bring about greater domestic utilization of gas, residential class rates have been quite widely adopted recently. They are designed to encourage diversified loads and wider acceptance of gas as a fuel and should further entrench gas in the domestic field. I commend to your attention the report of the Rate Committee on this subject.

It is an important function of your Association to promote gas company employee education. The progress of any industry is dependent in large measure upon the men in it. This industry must attract men of ability and create a stimulating environment of both technical and commercial

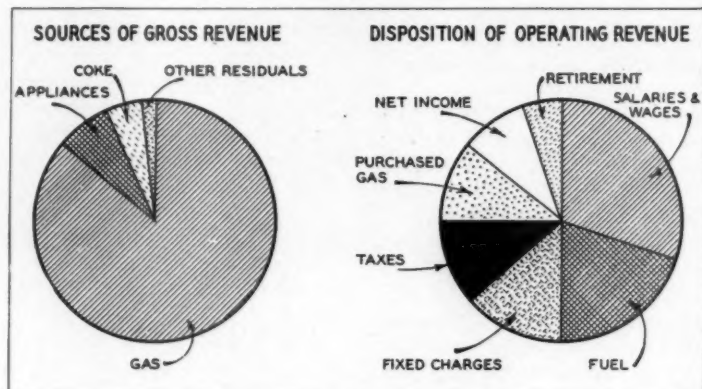
character if it is to reach its highest development. The gas business has given high examples of men whose influence will live for years without number because of their appreciation of the value of the training of the individual to the industry and their desire to be of service to their fellow workers. I urge that continued encouragement to self-education be afforded by the American Gas Association.

The utilities of the country have shown in recent years unfailing confidence in the business future of the country. The gas industry has contributed capital funds for extensions and additions, has intensively developed its business and has cooperated fully in every useful activity to promote recovery. Its members have universally recognized their responsibility towards their working forces and thus identified themselves in a definite way with their social security. The industry looks forward to the time when economic stability will again be obtained through more intelligent recognition of the essential contribution of business to the economic life of the nation.

Economic Welfare

It is worth while, I think, to draw attention to the gas industry's importance to the nation's economic life. In 1934 the operating revenue from manufactured and natural gas sold to the ultimate consumer amounted to \$702,614,000. It served 15,722,000 customers and there were 125,900 employees on its payrolls. Its taxes paid for that year were \$73,300,000, or 10.43% of its total operating revenues. Its purchases of manufacturing material and other material, appliances and supplies help to support many other industries and their employees, so that it is evident that its financial welfare is a matter of concern to the country at large. High taxation bids fair to become a growing problem. The gas industry has at least been bearing its share. It would seem it has become a medium for taxing bodies to resort to when searching

MANUFACTURED GAS INDUSTRY 1934



for new sources of revenue to provide for enlarged spending programs. The destructive effect of high taxation is cumulative. It destroys productive capital and where such large provisions from earnings must be made for taxes with capital taking all the risks of loss the incentive to employ capital in productive enterprises is greatly discouraged.

It is fallacious to assume that high taxes can be passed on to the consumer, for a point is reached where the cost is greater than the consumer will pay, with the baneful result of restricted sales and still higher costs. The industry, therefore, should take its stand against increased governmental spending and especially against spending for competitive enterprises and unproductive and wasteful objects.

It must be continually borne in mind that the American Gas Association is constituted for the purpose of serving the gas industry and the public which it in turn serves.

The American Gas Association Laboratory in Cleveland is now ten years old and is destined for increased growth and service. Its Los Angeles branch is steadily growing in the favor and confidence of the industry on the west coast. The tenth anniversary will be observed at our general session on Thursday morning and I need not, therefore, go into any detail here. The achievements of this institution are quite well known throughout the in-

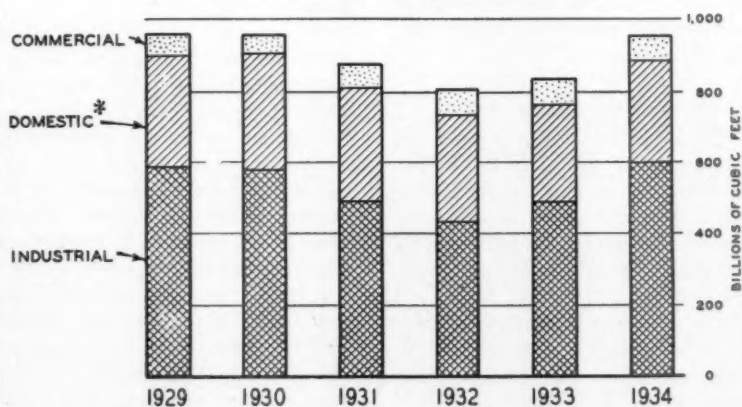
dustry and throughout the country, and are a tribute to the men who played such prominent parts and who were active in its establishment and development. R. M. Conner, its director from the beginning, deserves the good will and confidence of the industry which he has so well earned.

The Natural Gas Department has continued to contribute much of value to the Association. Its meetings cover a wide scope of subjects and the work of its committees is also of great interest to men in the manufactured gas

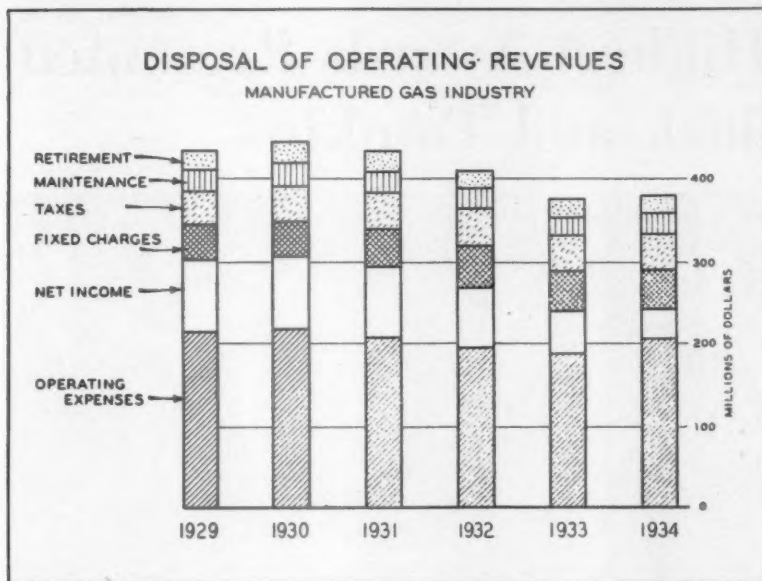
field. The problems of the two branches of the industry so overlap that the collaboration now provided for is essential for the best interests of both. Among the more important of its activities are the research projects conceived and executed by the Main Technical and Research Committee under the leadership of its chairman, Howell C. Cooper, and its various subcommittees, and financed by the Association. Some of these activities have reached a stage of completion on their present program, resulting in the preparation of reports. One of these subcommittee reports, that of the Gas Measurement Subcommittee, has already been printed and is now being distributed to the industry. The report on pipe line flow is in the hands of the printer and will shortly be issued. There is no doubt that these activities are of great value to the industry.

A meeting of the Natural Gas Department was held in Memphis, Tennessee, May 9, which I had the pleasure of attending. The papers were well selected and effectively handled. There was distinct conviction that the natural gas industry is destined for further growth and usefulness and that the pioneering spirit is still dominant. I congratulate the chairman, John B. Tonkin, upon the successful year's work under his leadership.

GAS SALES - NATURAL GAS INDUSTRY



*Domestic Includes House Heating



The Association functions through its sections and committees and there is revealed throughout this work a full realization of the tremendous importance of developing to the greatest possible extent the output of the industry. To do this rates must be adjusted to meet market requirements without discrimination and designed to meet such new conditions as may arise on the frontier of our settled economy.

It is conceded that while there may be no such thing as complete saturation of the market for gas, the important thing is to bring about the greatest possible approach to that end. Rate and competitive cost studies must be continually pursued and their application to particular consuming groups developed. Intelligent advertising methods must be followed, national advertising plans developed where practicable and gas as a fuel prominently brought before the consuming public.

Executive authority lodged with sales organizations is essential as is competent and properly paid sales personnel. Customer surveys and accurate statistical information of customer installations are necessary. Specialists in the application of the various uses of gas in its different fields who are also competent in salesmanship must be developed. Appliances must be made increasingly efficient and

their introduction in large volume accelerated by cooperation with manufacturers, dealers, plumbers and others and their interest constantly spurred by various means. Without doubt, time sales with liberal terms must be provided for their use, as well as utilized by gas companies, in order to create greater distribution of gas using appliances. The competition for the consumer's dollar has become one for the consumer's promise to pay.

The domestic cooking load is the basic market upon which to build other sales. Water heating, refrigeration and air conditioning have enormous potentialities in the domestic field and must be developed energetically if the cooking market is to be retained and properly extended. It is particularly important to foster and promote the use of gas for water heating on account of its favorable load characteristics. The cultivation of the market for house heating is a challenge to the industry.

Constant vigilance in the promotion of the use of gas in the industrial and commercial fields is called for. Modern competition is keener than ever before and the industry must be alert to improve its application for these uses and create greater satisfaction to the users.

Householders, manufacturers and commercial users are looking for economies and conveniences as never be-

fore and are not content today with anything less than the best service at a competitive cost. It is the industry's duty to give to all its consumers such service at the lowest possible cost consistent with preserving the integrity of its property.

Your Association is peculiarly fortunate in the personnel of its headquarters' staff. Headed by the managing director and including every member it is an efficient working organization. The results accomplished during the Association year in the service of the industry are largely due to them. I want to thank them as well as the Board of Directors and members of committees for their loyal support during the Association year.

I should like to repeat the statement I made to the New England Gas Association early this year. The gas industry has a long record of useful service. It provides an essential service. It has had a steady growth through good and bad times alike. It can greatly assist in leading the way to a higher living standard. Governed by enlightened policies and under sound governmental regulation it can look forward confidently to greater service to the public and to a prosperous future.

Herbert A. Wagner



Photograph of a portrait of Herbert A. Wagner, president of the Consolidated Gas Electric Light and Power Company of Baltimore, which directors of that company have recently had placed in the Board Room. Mr. Wagner has been president of the company since 1915 and one of its officers for more than 25 years. The portrait is by Alphonse Jougiers

Association's Highest Awards Presented to Hallock and Tomkins



Left—Frank L. Hallock receiving the Charles A. Munroe Award from A. J. Gonnoud, chairman of the Award Committee. Right—Presentation of the Beal Medal to S. S. Tomkins by President Young

THE two highest awards bestowed annually by the American Gas Association were won this year by employees of Consolidated Gas Company of New York. The presentations were a high spot at the general session of the annual convention of the Association at Chicago, Wednesday, October 16.

Frank L. Hallock, director of the Public Contact Division of the Consolidated Gas Company of New York, received the Charles A. Munroe Award, generally considered to be the highest within the power of the Association to grant, for "developing a practical and relatively inexpensive method of raising the level of human service rendered by public utility companies."

S. S. Tomkins, assistant chief chemist of the Consolidated Gas Company of New York, received the Beal Medal for the most important technical paper delivered at Association meetings during the year.

This is the first year in the history of the Association that representatives of

one company have received both awards. Mr. Hallock is the second employee of the Consolidated Gas Company to receive the Munroe Award, which consists of substantial financial recognition and an engrossed certificate.

Joins Select Group

In winning the Charles A. Munroe Award, Mr. Hallock joins a very select group of men in the industry. Only six others have had the honor of receiving it. The first was Nils T. Sellman, assistant vice-president of the Consolidated Gas Company, who received it for his work in advancing and developing automatic gas refrigeration. Other winners have been John L. Conover, Public Service Corporation of New Jersey; T. V. Purcell, The Peoples Gas Light and Coke Company; H. H. Cuthrell, The Brooklyn Union Gas Company; W. R. Hainsworth, Servel, Inc.; and Henry O. Loebell, Natural Gas Pipe Line Company of America.

The 1935 Award Committee unanimously agreed that the award this year should go to Mr. Hallock for developing a practical program of contact training for employees. In making the presentation A. J. Gonnoud, chairman of the Munroe Award Committee said:

"At a time when utilities are harassed by problems which vitally effect their very existence, it is indeed significant that a special endeavor to render customers the best possible service is continued. Even more significant is the fact that this endeavor, in the face of other most worthy achievements, is singled out for special distinction by the gas industry. It seems to me that this is certainly evidence, if evidence is necessary, that utilities are sincere in their endeavor to render service as near perfect as man can make it."

In the opinion of the Award Committee, Mr. Hallock's contribution to the industry at large was distinctly orig-

inal and has been of great value not only to his company, but also to all public utility companies. Under the Public Contact Division all of the employees who meet the public convene in regular monthly conferences under the direction of a leader. A general program is worked out for the year and at each conference the employees discuss and solve the various problems which arise in their every day contact with customers. Mr. Hallock started this work for the Consolidated Gas Company and its affiliated gas companies in 1930. Since that time it has been extended, under his direction, to include most of the electric companies in the system.

The following summary of Mr. Hallock's contribution to the industry is quoted from the recommendation submitted to the Charles A. Munroe Award Committee:

"Essentially, the program of contact training development by Mr. Hallock is based on the importance of the personal contacts which our employees make with the customer. The reputation of a company is largely a matter of the reaction of the public to the treatment it receives from the company's representatives. Our method of improving this treatment is human and direct, and bears no resemblance to so-called 'pep talks' on the one hand, or 'school room' tactics on the other. The result has been that each of our 2500 contact employees takes a deep and genuine interest in maintaining our human service at the desired high level."

Mr. Hallock's Career

Among the many accomplishments of the public contact program are the use of the visual method of training by using slide films, the development of a manual for public contact employees worked out by the employees themselves, and other achievements.

Mr. Hallock entered the utility business in 1910 as a bookkeeper for the Northern Westchester Lighting Company at Ossining, New York. He later advanced to chief clerk, and in 1921 entered the employ of the Bronx Gas and Electric Company as superintendent of the Commercial Department. In July, 1927, he became assistant secretary of that company and in February, 1928, assistant treasurer, retaining his

duties as superintendent of the Commercial Department. In 1930 he was appointed assistant to Vice-President O. H. Fogg and director of the Public Contact Division. A year ago his work was extended to include other companies in the system.

The winning of the Beal Medal by Mr. Tomkins this year makes him one of the three engineers in the gas industry who have received this award twice. It consists of a bronze medal and financial recognition and has been bestowed sparingly in the past. Mr. Tomkins won it two years ago for his paper entitled "Gas Detection Instruments."

Presentation of Beal Medal

The presentation was made by P. S. Young, President of the Association, acting in behalf of the family of the late W. R. Beal, who first offered the medal in 1897 for the best technical paper presented at Association meetings. It has been sparingly bestowed.

The award was based on the paper entitled "Theoretical and Practical Considerations in Purging Practices," which Mr. Tomkins presented at the 1934 convention.

The list of those who have received the Beal Medal contains the names of many well-known leaders of the gas industry. Among them are: Henry L. Doherty, Arthur Glasgow, I. N. Knapp, B. H. Spangenberg, Henry L. Rice, W. H. Gartley, W. H. Fulweiler, C. J. Ramsburg, H. W. Alrich, L. E. Worthing, C. O. Bond, O. B. Evans,

F. E. Steere, E. J. Brady, F. W. Sperr, Jr., Arthur W. Warner, Ralph L. Brown, L. J. Willien, Louis Stein, Philip Thornton Dashiell and R. B. Harper.

Mr. Tomkins was born in New York City. He attended New York University School of Applied Science, graduating in 1917 with the degree of B. S. in Chemical Engineering. In 1919 he received the degree of Chemical Engineer from the same university. He joined the Consolidated Gas Company, Chemical Department, in 1917 and was assigned as chemist to the Laboratory which was then located at the 21st Street works. He was transferred to the office of the chief chemist in 1925 and appointed assistant to chief chemist in 1926.

On June 1, 1928, he became superintendent of General Laboratories and in February, 1931, he was appointed assistant chief chemist.

He has served as a member of the Technical Section Managing and Chemical Committees of the American Gas Association and was chairman of the Chemical Committee during the Association year 1934-35. He is now a member of the newly formed Committee on Gaseous Fuels of the American Society for Testing Materials and holds membership in the following organizations as well: American Chemical Society, American Institute of Chemical Engineers, Society of Gas Engineering of New York City and American Gas Association.

Wins A. G. A. Scholarship at Johns Hopkins



John Machek

THE American Gas Association Scholarship at The Johns Hopkins University has been awarded to John Machek for the 1935-1936 school year. This scholarship is one of two maintained by the income from the Trustees Gas Educational Fund administered by a committee consisting of A. E. Forstall, E. C. Uhlig and W. H. Vickers. The second scholarship is maintained at Purdue University.

John Machek was born in New York City, June 28, 1914. He completed his high school training at East Islip, New York, and entered The Johns Hopkins University in 1932. He is in his senior year and is a candidate for a degree in the Gas Engineering Course offered at that University. Last Spring he was elected to Tau Beta Pi, the honorary engineering fraternity at The Johns Hopkins University.

In the summer of 1932 Mr. Machek worked as laboratory assistant in the gas distribution laboratory of the Long Island Lighting Company. The following summer he worked for the same company, doing construction work. For the past two summers he has worked in the distribution department, making pressure surveys on gas mains.

The Urgent Need of Cooperative National Advertising

OUR President has told you that I come from the Pacific Northwest—the State of Washington.

As a member of the Pacific Coast Gas Association, I attended the convention which was held by that Association in Pasadena about a month ago. The outstanding accomplishment of that convention was the adoption of the following resolution:

"That the principal problem confronting the gas industry lies in the competitive activities of the producers of other fuels, combined with the destructive activities of certain governmental agencies, and politicians through their so-called measuring sticks in various parts of the country, as definitely pointed out by President Moeller in his opening address before this convention. The Association therefore recommends that immediate, effective and vigorous steps be taken to build up through every possible co-operative effort of its members of all classes, public acceptance for gas as the best and most modern, as well as the most economical fuel for all domestic and industrial purposes, not only with a load building objective, but also to counteract political attacks and destructive propaganda, and that this Association take the necessary steps to bring this matter before the American Gas Association, and to urge it to work out and initiate such a campaign on an equally vigorous and national scale."

That is my excuse for being here. That is my excuse for appearing before the Board of Directors of this Association on Monday evening.

I would like to give you a brief idea of why the Pacific Coast Gas Association was led to adopt this very strong recommendation to the American Gas Association. It is not a new idea—this matter of national advertising to support the gas industry. It is an idea that Mr. Lauer, one of the leading men in our industry, and a strong committee under his direction,

Address before General Session, A. G. A. Convention, Chicago, October 16, 1935.

By **JAMES F. POLLARD**

Seattle Gas Company, Seattle, Wash.

proposed, I believe, about two years ago. Then it was seriously considered, but for some reason, about which I do not know, it did not at that time take form and become actual.

The idea has been discussed on other occasions. Perhaps there has not been the psychological moment. I hope that this is the time.

Mr. Wallace has just told you that in Minneapolis, 88 homes out of every 100 are equipped to cook with gas. That is wonderful. I will tell you in a few minutes how many there are in Seattle.

A Gratuitous Remark

The other day the Supreme Court of the State of Washington issued a decision on a matter involving a gas company. The learned justice gratuitously threw in a remark. He said: "I understand that the gas industry is on its way out anyhow." That is from the Supreme Court of the State of Washington—a remark buried in a decision of that court which will probably not be read by many.

But here is something that came out in a full-page advertisement in a Seattle newspaper. No doubt similar material appeared in newspapers all over the country. It was a full page advertisement with a picture of the White House in large size and in an inset underneath the White House was a picture of a long commercial electric range and standing behind the range was the White House chef. The caption was: "The White House has gone modern. The kitchen is now fully electrified."

I cut that out and handed it to my sales manager and he put a note across the face of it—"Another Democratic extravagance,"—and handed it to each one of the salesmen.

I spoke to the advertising manager of the Puget Sound Power and Light Company, congratulating him upon

that advertisement. "Of course, I don't like it," I said, "but I have to admit you put out something with a lot of power in it." He said: "You noticed that we did not say they threw out gas in order to put in electricity, but we did not forget to tell that to our salesmen."

While our Pasadena convention was in session, this advertisement came out in a Los Angeles paper. It says: "No danger means no fear." There is a little picture of an innocent baby in a bath tub. And then: "Approved electric water heaters are safe. It is a comfort to know that no trouble can come from your electric water heater. You enjoy all the hot water you want without thought of flames or fumes or pilot trouble that might be extinguished without your knowledge. Ask your dealer," etc.

You say that is just one of those unethical municipal ownership outfits. That was an advertisement of the Bureau of Power and Light.

Reaching the Housewife

Here is another one: "No more scrubbing sooty pans. Ask about free wiring," etc. It is a little advertisement but it is poison that trickles into the ear trumpet of the American woman.

Here is another advertisement of the Bureau of Power and Light on electric refrigeration, giving some eight reasons for it, and the third one:—"No pilot, no fumes, no danger,"—and the seventh one:—"The electric way is the modern way."

Here is another one from the Bureau of Power and Light: "No flame, no fumes, no soot, no costly plumbing." That is an electric refrigeration advertisement.

Now those advertisements are from the Bureau of Power and Light, which you might term an unethical municipal plant, but here is one by the Southern California Edison Company, a privately owned institution. Two women are looking at some gas ranges

and one says, "but they still cook the same old way; let's not be hasty before we buy—let's look around a bit." Then an inset denotes the passage of time, and they start in with the new electric ranges and down at the bottom is the same old story—"Before you buy go to any electrical dealer and learn the marvels of this new day cooking method. Find out why so many hundreds of thousands of women say it is cleaner, easier and cheaper."

It is not as cheap in our territory as gas is and even manufactured gas will do the job for at least 25% less than electricity, but they don't mention that.

Here is another one by the Southern California Edison Company: "No flames give you complete peace of mind; no plumbing or permanent connections of any kind."

The Edison Company again: "Why be old-fashioned? You would not go back to the old arc light; why stick to the old-fashioned stove?" Here is an old fish-tailed gas light in the corner up here. Here it shows a house blocked out in each block, and goes on: "Right today in Edison territory alone approximately one home in every block has an electric range. Why? Then it says among ten reasons: 'Fast—cooks just as fast as any other cooking fuel.' Another statement which is not true. 'Clean, no soot, grime, matches or ashes, no smudgy walls,' etc."

Hitting Back

One of the boys in the Los Angeles Gas and Electric Corporation reconstructed the advertisement. He put it: "Why be old-fashioned? You would not go back to the old-fashioned light. Why stick to a slow poke range?" And for the fish-tailed gas light he substituted an old carbon electric lamp. Then in regard to the map, he said, "Right today in Edison territory alone less than one home in every block has an electric range. Why?" Then he gave ten reasons.

Now I have given you some horrible examples of the kind of publicity that is being put out on the Pacific Coast, both in California and in the Northwest, and you say: "Well, that does not apply to my territory. In Minneapolis, for instance, we have 88

gas homes out of every 100. This wave of enthusiasm for competitive fuels applies only in your local territory. It is your local problem." To that I say, "Oh, Yeah?"

I hold in my hand a booklet that was issued by the Hot Point Electric Company and circulated in your territories as well as in mine. Here is what one page says, and it is just full of this kind of thing: "No chance of overheating—automatic control. No matches, no flames (that is in red type) to furnish a constant menace, especially where there are small children, and there are no closed room dangers."

Hygiene and Gas

Here is one that I daresay most of you have received or seen. It was circulated among all the dealers, not with any signature on it, but it came in an envelope and in the upper left-hand corner it said: "After three days return to the General Electric Company, Specialty Appliance Department, Nela Park, Cleveland, Ohio. It is a reprint from one of these doctors who writes for the newspapers and who attempts through his columns to give you the answer to all human ills,—Dr. William Brady. I believe it appeared first in Detroit. It says among other things: 'From the hygienic viewpoint, electricity is ideal for cooking because where there is no combustion there is no chance of pollution of the air with harmful combustion products. In my opinion, coal or wood stoves or ranges come next because they are all fitted with stove pipes to carry the combustion products up the chimney or out of the house. Disregarding factors of cost, convenience and efficiency, I place gas, oil and gasoline stoves, ranges or hot plates lowest in the list because there is usually considerable pollution of air in the kitchen by combustion products where these fuels are used.'"

The General Electric Company photostated that and said: "Here is one for the book. Electricity is ideal for cooking; coal or wood next best," and at the bottom of the list they did not say it, but pointed to the word "gas."

Here is another reason why I think this problem applies to the territory of every gas company, I care not who operates it or owns it or where it is

located. I have here a book that was gotten out by the McCall Publishing Company for the purpose of stimulating the electrical industry to advertise in their national magazines. It is a survey and report on TVA. Among other things, it says: "After our investigators went all over this proposition we make you this report: 'TVA has caught public interest. Fifty-four thousand people registered as visitors at the three major TVA projects in one recent month coming from every state in the Union. Nine thousand people in three days visited the electric home in the Farm Authority Appliance Display recently opened in Chattanooga. About 100 letters a month are received by TVA officers in Knoxville from electric consumers in all sections of the nation asking what their bills would be under TVA rates.'"

Truth Won't Hurt

I hope they tell them the truth. It won't hurt the gas industry. But here is the dangerous thing. It says in conclusion: "It is also inescapable that we face an era of greater interest in household electrical appliances than ever before. So much space is being given in newspapers, magazines and on the air to the Tennessee Valley cheaper electricity, lower priced appliances, and easier terms of payment that public interest in household appliances is being accelerated. As one appliance manufacturer expressed this condition, 'The TVA is the greatest piece of promotion that has ever broken for the electrical industry. Imagine the President of the United States standing up and saying that every home in America ought to be completely electrified. We could not have bought such publicity for a million dollars. Certainly, regardless of the eventual fate of the TVA it has increased public interest in home electrification.'"

If that does not affect your territory you are very fortunate, and everything is all right.

Here is a telegram that came yesterday from New York. It says: "The New York Times today reports meeting here last night as follows: 'Hopes to end use of gas. Mayor LaGuardia said he hoped to make electric current so cheap that the gas companies would be put completely out of business and

Inaugurating a Weekly Radio Program



Frank W. Smith, president of the Consolidated Gas Company of New York, delivering his initial weekly talk to the radio audience over station WEAJ on the regular Sunday night broadcast sponsored by the company. The series of one-hour programs begin at 6:30 P.M., and are entitled "Echoes of New York Town"

the next generation would have to go to a museum to see that dirty, unsightly, unsanitary gas stove. The utilities cannot afford to dispense with obsolete gas plants because they go to make up the enormous figures in the rate base, he charged. With these low rates we will be able to cook, light, wash and clean our homes with electricity."

Mayor LaGuardia—boy-friend of the President!

Evidently other people think more about our industry than we think of it ourselves. Here is an advertisement from a magazine published by the Farmers Deposit National Bank of Pittsburgh. It has a picture of a gas burner, a range burner in the upper right. It is headed—"Gas." It says: "In times like this when every industry is being judged at least partially on a basis of its contribution to humanity, the gas industry has clearly established its right to be considered a good citizen. . . . It serves millions of people in thousands of industries. It delivers its product in stable and useable shape at a cost figured in pennies. It employs hundreds of thousands of people and makes that employment steady, pays good wages,

provides good working conditions, is reasonably free from labor troubles and tries to pay a fair return on the money the public has invested in it."

I understand that at a meeting of the Natural Gas Department on Monday afternoon, Frank Smith of Houston brought in all of the advertising of the electrical appliances for the home and all of the gas appliance advertising that had appeared in the leading women's magazines over a six months' period. He had those mounted on long sheets of wrapping paper. The sheet of wrapping paper that contained all of the gas advertising was exactly twenty feet, while the sheet containing the electrical appliance advertising was 125 feet long.

What has been the result of all this national propaganda? The result has been that Mrs. America all over the country is rapidly becoming convinced that until her home is thoroughly electrified she is just in the natural state of an under-privileged savage, and we have got to answer back and tell Mrs. America the truth about the advantages of gas service of all kinds in the home compared with these other things that are coming along.

It is not only the electric range that we have to think about. The General Electric Company has originated a very nice slogan which suits them wonderfully. They have just put out a gas furnace for heating homes and so they say: "Everything above the floor—electric; everything below the floor—gas." They want to push us out of the kitchen and when we get to the basement, we will meet the oil man who will gradually skid us on out into the street.

What of Our Investment?

Then, what will we do with our gas holders, with our gas mains and the five billions of dollars that the industry has invested?

What are we going to do about it? What can we do about it? Rates will not do it. The politicians, as per Mayor LaGuardia's telegram, accuse the combination companies, at least, of holding the electric rates up to boost the poor dying gas industry, and the gas men in the combination companies accuse the big bosses of being so electrically minded that they don't give them a break. So you can take either horn of the dilemma.

They have 88 gas homes out of 100 in Minneapolis. We have in Seattle 39,000 homes that are equipped with electricity. It is true that we have 42,000 homes that are equipped with gas—slightly more than the number of electric homes, but remember that our gas rates are 25% lower to do the same job than the electric rates, so that rates will not do it. Mrs. America is going to have what she considers smart regardless of what it is going to cost her.

What can we do? We have the gas cooking load. It is ours. Fourteen million people, I think the figures show, are today cooking with gas, and about 1,250,000 are cooking with electricity. But we have had 14,000,000 people cooking with gas for a good many years. That curve is a long horizontal one; the electric curve started with no people cooking with electricity eight or ten years ago and has gone up rapidly. Where it will end, I don't know. I will leave that to you.

But we have that cooking load now and it is not going to cost us nearly

(Continued on page 431)

Organize Association of Gas Appliance and Equipment Manufacturers



W. T. Rasch

At a meeting of gas appliance and equipment manufacturers held at the A. G. A. convention in Chicago, October 14, the Association of Gas Appliance and Equipment Manufacturers was organized. It is affiliated with the American Gas Association and incorporated under the laws of the State of Illinois. Headquarters of the organization will be in New York.

William T. Rasch, president of the American Gas Products Corporation, was elected president of the new group. Other officers are Merrill N. Davis, of the S. R. Dresser Company, vice-president, and Donald McDonald, of the American Meter Company, treasurer. Members of the Board of Directors are: I. W. Peffly, R. J. Canniff, Lyle C. Harvey, J. S. Drillette, F. E. Sellman, Frank H. Adams, John A. Fry, Earl W. Roberts, H. A. Wilson, W. P. Hutchinson, J. J. Greene, F. G. Curfman and H. J. Johnson.

Executive Committee

At a meeting of the Board of Directors, October 16, an executive committee was appointed including F. E. Sellman, John A. Fry, F. G. Curfman, together with W. T. Rasch, Merrill N. Davis and Donald McDonald as ex-officio members. The Board elected George Frazer, counsel, and C. W. Berghorn, executive secretary.

Under an affiliation agreement the American Gas Association and the Association of Gas Appliance and Equipment Manufacturers agree to work together for the promotion of cooperative relations between manufacturers of gas appliances and equipment, gas utilities, dealers, customers and others engaged in or related to the gas industry. According to the agreement, members of the manufacturers' associ-

ation will become manufacturer company members of the American Gas Association.

The objects of the association, as defined in the Constitution adopted October 14, are as follows: To promote the use of gas as a fuel; to promote cooperative relations with gas utilities, dealers and customers; to promote cooperation among its members for proper use and increased distribution of gas and gas appliances, and equipment; and to promote and further the interests of the Manufacturers of appliances, accessories, apparatus, and supplies used in the production, distribution and utilization of manufactured, natural or other gases. Also to collect and disseminate information of value to its members; to establish and administer fair trade practices; and to conduct exhibits of products of members of the association in cooperation with the American Gas Association or other organizations.

Notable Career

Mr. Rasch brings to the organization a wide experience in the utilities and gas appliance field. He started his business career with the Consolidated Gas Company of New York in 1908, in the Department of Mains and Services, under Colonel Oscar H.

Fogg. In 1912, he was assigned to special work in connection with reproduction values of the same company.

Later, Mr. Rasch assisted Colonel Fogg in organizing the Department of Utilization of the Consolidated Gas Company, and became first assistant engineer of utilization. During the World War, he succeeded Colonel Fogg as engineer of utilization.

In 1925, he became president of the A. H. Wolff Gas Radiator Company, which shortly afterward changed its name to the American Gas Products Corporation. He continued as president when, in 1931, the company became a subsidiary of the American Radiator-Standard Sanitary Corporation.

Mr. Rasch is a director of the American Gas Association. He was one of the original members of the Laboratory Requirements Committee and was chairman of the Committee on Standardization of Gas Appliance Specifications. Under the N.R.A. Code, he acted as vice-chairman of the Gas Appliances Institute and chairman of the Gas Water Heater Institute.

Ricketts organized the first company to manufacture gas stoves for cooking in July, 1849.

Awarded Natural Gas Fellowship



George Mann

GEORGE L. MANN has been awarded the Natural Gas Department Fellowship of the American Gas Association at West Virginia University.

Mr. Mann was born at Clarksburg, West Virginia, May 14, 1914, where he attended grammar school and Washington Irving High School. He entered West Virginia University in 1931 and received his B.S. Ch.E. degree from West Virginia University in June, 1935. He is at present a candidate for a master's degree in chemical engineering.

During his junior year, he was elected to Sigma Gamma Epsilon, honorary geological, ceramic and metallurgical fraternity and Tau Beta Pi, honorary engineering fraternity. He was also elected president of the General Engineering Society of the College of Engineering during his senior year at the University.

Mr. Mann is pursuing his investigation and research under the direction of Dr. S. P. Burke, Director of the Department of Industrial Sciences.

The Challenge to the Gas Industry



F. A. Newton

WHAT I am going to say some of you may not like. I am afraid I bring no message of cheer. The gas industry, however, is always ready to face facts and there are a few facts I

would like to bring to your attention.

Before I go further, I think it is proper that I give you a background, if you please, so that you may understand how and under what experience I have reached the conclusions I am going to state.

I have been chairman of the Rate Structure Committee of the American Gas Association and have served on that committee for a number of years. At present I am chairman of the Rate Research Committee of the Edison Electric Institute, having served in that capacity some three or four years. I believe that I know, as well as anyone, what the situation is generally with respect to the rates throughout the country for the domestic users of both gas and electricity. I make the unqualified statement that with respect to the promotional character of domestic rates, generally speaking those for the domestic user of electricity are more promotional than those for the domestic user of gas.

Objective Rate Plan

The Commonwealth & Southern Corporation, with which I am associated, was the originator of the so-called Commonwealth & Southern Objective Rate Plan. I think most, if not all, of you are familiar with that plan. It has been adopted by a number of electric utilities throughout the country, in fact, it is now used in 22 states. It has been approved by several State Commissions.

Address before General Session, A. G. A. Convention, Chicago, October 17, 1935.

By FRANK A. NEWTON

The Commonwealth & Southern Corporation, New York, N. Y.

Several Commissions have ordered the utilities in their respective states to adopt some such plan.

This Objective Rate Plan is probably the most promotional scheme of rate making devised in recent years. The results which have been accomplished under the plan have been excellent in the way of increasing the consumption per customer and in the selling of electric appliances. Perhaps I may best express what the companies which have used the Objective Rate Plan think of it in the words of the commercial manager of The Tennessee Electric Power Company. He said: "The Objective Rate Plan is the greatest boon for the salesman that ever happened in the electric field. New opportunities galore are open to him. Every customer is his meat for some appliance or added light."

Promotional Rate Making

The Tennessee Electric Power Company, by the way, recently won the highest honor which can be bestowed on any company by the Edison Electric Institute for its accomplishments, particularly with reference to increasing sales per customer, employee cooperation in the selling of merchandise and in promotional ratemaking. That company in the 18 months succeeding the effective date of the Objective Rate Plan sold 26,025 electric refrigerators, 7,321 electric ranges, and 3,304 electric water heaters. The present saturation of major appliances is approximately 42% for refrigerators and 20% for ranges. Since the adoption of the Objective Rate Plan, it has increased its kilowatt hour consumption per domestic customer nearly 50%. Its sales per customer are now running approximately 900 kw.hr. per year.

Recently I heard one of the most progressive electric utility operators

in this country make a most astounding statement. He is, as I say, one of the most progressive of the electric utility managers. His rates are and always have been decidedly promotional in character. His appliance campaigns are always aggressive and unusually successful. He assured me that he confidently expected to take practically all of the cooking and water heating business away from the gas company—that its proper place was in space heating and the industrial field and that was where it would soon find itself. One seldom hears him talk through his hat but he has in this case.

Electric Competition

You must not overlook the fact that the electric utilities generally have made some very marked reductions in rates during the past two or three years. Some of these reductions, it is true, were ill-advised and the rates adopted not of the proper type. The fact remains, however, that they have made very substantial reductions in rates, particularly to the domestic customers. Now they are moving Heaven and Earth to get back the revenue lost by reason of these rate reductions. They must build up their consumption per customer. They are doing this and they are doing it very largely by selling electric cooking and electric water heating. I do not mean to say that they are neglecting other fields but they naturally and obviously center their attention, very largely upon the cooking, refrigeration and water heating as there they will secure the quickest and best results. They are convinced they are going to get this business; they are enthusiastic about it; there seems to be no limit to their confidence and to their program. Many of the electric utilities have set a goal—that goal being an average use per domestic customer of 1,500 to 2,000 kilowatt hour per year. Obviously they are not going to reach that goal or get anywhere near it without a tremendously increased

volume of electric cooking, particularly.

Some gas men complain that the electric utilities have made domestic rates which are unjustified from the standpoint of cost. It is asserted that these rates are lower than electric utilities are justified in making. Maybe some of them have made some mistakes. Anyway, this is water over the dam. The rates are there. The promotional plans are in full bloom and growing in favor and that is the situation you, in the gas industry, are confronted with.

I have also heard it said that some of the plans adopted by the electric utilities for selling electric merchandise are fantastic, that the deferred payment plans are over-done, the terms too low and down payments too small. There is nothing particularly unusual or strange about these plans. They have been used by merchants, generally for sometime. The results obtained so far have not disappointed the electric utilities. When you have a combination of very promotional rates for domestic electricity with extremely liberal payment plans for appliances, with very aggressive merchandise selling and with wholehearted employee cooperation, you have a situation which is a real challenge to the gas industry.

Combination Companies

It has been said that the combination companies, that is companies operating both gas and electric utilities are in a large measure responsible for the present situation, that is responsible for the failure of many gas companies to adopt plans similar to those strongly put forward by the electric utilities. In other words, it is said that in the case of combination companies, the electric utility is favored and at the expense of the gas utility. There, undoubtedly, are some such situations. There are others where just the reverse is true. These situations may be due to the training and attitude of the particular manager. He may have been brought up in one utility or the other. Or, it may be due to some local situation. All I can do, however, is point to the undisputed fact

that in a number of cases, the combination companies have more promotional rates for the domestic user of gas, have more liberal payment plans for merchandising and are more aggressive in merchandising selling than many straight gas companies.

As I see it, there is not a single thing, the electric utilities have done with respect to promotional rates, Objective Rate Plans, aggressive merchandising, liberal payment plans, attractive merchandising and employee cooperation that the gas industries cannot match plan for plan right down the line, if they will, and many of them are.

Utilization Efficiency

The gas industry insists that gas is more economical for the domestic customer than electricity for cooking and water heating. It is a fact that the appliances for the utilization of gas for cooking and water heating are as efficient, as attractive and as cheap as those for the utilization of electricity for the same purposes but the customer must be told these things—not once but repeatedly. If these things are true, you in the gas industry owe a duty and obligation to the domestic customers in this country to show them the truth.

It has been said that perhaps the electric utilities may be in a better position to adopt extremely promotional rates and to adopt very liberal payment plans for merchandise because less than 40% of the revenue of the electric industry, generally, is derived from the domestic users. On the other hand, the percentage of the total revenue of the manufactured gas companies derived from domestic users is nearly 75%. In the natural gas companies that proportion is approximately 60%. In view of these percentages, it is contended that the electric utilities are able to go much further than the gas companies. Back of this contention seems to be a thought that in the case of the electric utilities, the domestic field is more or less like a leader in a department store, sold at an attractive price, maybe at cost, in order to sell other goods at a profit. I don't believe this is so and I don't see

much force to the argument. Anyway, one thing is clear, namely, that the field from which 60% to 75% of the total revenue of the gas industries is derived is one of very great importance to the industry and anything which threatens this particular class of service is a definite challenge to the industry.

Some people in the gas industry have chuckled a little from time to time at the troubles the electric utilities have been having. They have viewed the reductions in rates for electricity which have been forced upon the electric utilities, feeling sorry for the electric utilities but feeling better than if they themselves were under such a strong attack. Perhaps they had better be sorrier for themselves because the electric utilities are moving Heaven and Earth to recover the revenue lost by these rate reductions and they are doing it very largely by invading the gas industry's field.

Administration Electrically Minded

Nor should it be overlooked that the Administration in Washington is definitely electrically minded. It apparently believes that every home and every farm in the United States should have an electric refrigerator, electric range, an electric water heater as well as a waffle iron. The failure on the part of the Administration to attack the gas industry as strongly as it has attacked the electric industry is not in any sense due to sympathy for the gas industry. Perhaps the attack in the form in which it has been is more serious than many of you have realized and while not directly against the gas utility is still very effective.

What I have said, the facts have lead me to say. I am thoroughly convinced, however, that you can meet every single plan, every single effort, every single scheme the electric utilities have devised if you will. Your commercial, merchandising and rate departments—all of your officers and employees—are eager to meet the situation, all ready to go if you will lead them.

The report of the Rate Structure Committee this year is in my opinion the most thorough and the most

valuable contribution ever made to this association by that committee. I strongly urge every executive and every commercial manager, particularly, to study it carefully. No report of that committee has ever discussed the situation more frankly, nor has the committee ever made more pertinent and more practical suggestions as to meeting the situation.

It is pertinent in connection with this discussion to tell you about the results of a recent investigation made in a middle western city. The standard of living in this particular city is above the average. Natural gas is supplied to customers at rates which are among the lowest in this section of the country. There is keen competition with the electric utility which also has unusually low domes-

tic rates. A complete inspection was made of every premises in the city noting all appliances used, both gas and electric. The inspection covered 20,402 premises of which 14,345 were using gas and 13,705 were using gas for cooking. The first interesting fact is that of the 13,705 customers using gas for cooking, only 30% were using ranges with heat control and only 12½% had insulated ranges. There were found 1600 electric ranges or about 8% of the total premises. At the same time, however, 4,137 premises were found using neither gas nor electricity but some other fuel.

Turning to the water heating situation, it was found that 7,375 customers, or about 43% were using gas for water heating. However, only 1,956 had storage type heaters which is but 26% of the customers using gas for water heating and 13½% of all the premises using gas.

In the case of refrigeration, only 274 gas refrigerators were found while there were 6,587 electric refrigerators in use. Yet there were 10,386 premises using ice and 2,192 with no refrigeration of any form.

Gas was being used for space heating on 430 premises. There were 396 using oil but 18,032 premises were using coal.

Incidentally, I would like to call your attention to the fact that this inspection which was very thorough only cost \$1,224 which is about 6¢ per premises inspected. It was decidedly worth while. Some of the facts surprised even those people most familiar with the local conditions. Certainly the possibilities for increased use of gas and for more efficient use of gas were very clearly revealed. In this particular situation, more aggressive merchandising, coupled with more liberal payment terms is perhaps the answer as the rates are decidedly low.

President Young has said that I have convictions. Certainly I have two convictions with reference to the gas industry. First, that you are faced with a very serious situation and a real challenge in the domestic field. My second conviction is that the gas industry will, as it has in the past, meet the challenge successfully.

Building All-Gas Wonder House



Glenn R. Chamberlain, president of the Grand Rapids Gas Light Company, removes the first shovelful of earth in the excavation for the "all-gas wonder house," shown at the right. In the picture are: Left to right—A. G. Schroeder, secretary of the gas company; E. V. Goebel, landscape architect; Mr. Chamberlain, H. T. Fletcher, realtor, and R. Dwight Owen of Owen-Ames-Kimball Company, builders



EMBODYING all of the newest ideas in home construction, the All-Gas Wonder House now being built at Grand Rapids, Michigan, by the Grand Rapids Gas Light Company promises to be one of the outstanding model homes in the country. Designed by General Houses, Inc., Chicago, it is the first prefabricated house of its type to be built in Michigan, and is one of the types of modern houses displayed at the Century of Progress Exposition.

The purpose of the model house is to demonstrate to the community that gas provides a vital service for the greatest comfort, convenience, efficiency and economy in the most modern and progressive type of home. The house will be fire-proof, termite-proof, completely insulated against heat, cold and noise and will be gas heated, air conditioned and fully equipped with modern gas conveniences.

Upon its completion, the All-Gas Wonder House will be open for public inspection for a period of a year.

Film Portrays Romance of Gas Industry



Above: A characterization of William Murdoch, who was the first to prove the usefulness of gas for private purposes, 1792. Right: In front of the gas-lighted home of William Murdoch

Above: A characterization of Thaddeus S. C. Lowe, father of the carburetted water gas process for which he received a patent in 1872



Above: Wondering citizens gathered outside the home of Baptista Joannes Von Helmont where, in 1609, he experimented with gas-making equipment. Right: Von Helmont with some of his gas-making equipment



Scenes from the three-reel sound motion picture film, "A Cycle of Service," produced by the Public Service Corporation of New Jersey, which scored a hit when shown at the Association's annual convention in Chicago. The film embodies all the latest developments in the art of motion picture production relative to photography, lighting, sound recording, optical effect and music

Publicity and Advertising Men Discuss National Program



H. Obermeyer

THE combination meeting of the Publicity and Advertising Committee and the Public Utilities Advertising Association attracted an audience of more than two hundred. Henry Obermeyer, chairman of the American Gas Association's Publicity and Advertising Committee, and J. R. Pershall, president of the Public Utilities Advertising Association, took turns presiding.

Following an excellent luncheon in the Club Lounge of the Palmer House, Mr. Pershall briefly outlined the work of the Public Utilities Advertising Association. He said that it had been responsible for developing the professional aspects of public utilities advertising, and in addition had served as a clinic for advertising men.

Urges National Advertising

Mr. Obermeyer then discussed the national advertising program which had been broached at the general sessions of the convention by a representative of the Pacific Coast Gas Association. Mr. Obermeyer spoke of the lighting load which the gas industry lost at the turn of the century, and then asked the question: "Will the cooking load follow the lighting load?"

He claimed that the industry must build up a wall of protection around its cooking load—and that more than local efforts are called for. The entire industry, he said, must unite in an effort to put gas forth nationally—and now! After giving various statistics on gas and electric ranges, he stated that now is the time for action. To clinch his arguments, Mr. Obermeyer gave a general analysis of all the advertising and publicity now used against the gas industry.

At this point Mr. Obermeyer announced that a Committee on National

Advertising had been appointed by the Executive Board, as follows:

Herman Russell, Rochester, *Chairman*; F. M. Banks, Los Angeles; Walter C. Beckjord, Pittsburgh; Davis M. DeBard, Boston; R. W. Gallagher, New York; Conrad N. Lauer, Philadelphia; B. J. Mullaney, Chicago; Henry Obermeyer, New York; Clifford E. Paige, Brooklyn; James F. Pollard, Seattle; Harold F. Smiddy, New York; H. R. Sterrett, New Haven; T. J. Strickler, Kansas City, and P. S. Young, Newark.

Proposed Program

Mr. Russell spoke briefly on the aspects of the proposition suggested by the Pacific Coast people. He said that the committee appointed by the Board had recommended a specific program of national advertising for three years, under the auspices of the American Gas Association. The committee has been empowered to develop a program of advertising to improve public acceptance of gas as a fuel—and to solicit the support of the industry. The cost of the program is estimated at \$500,000, or four cents per meter per year for not less than seventy per cent of the gas industry.

President P. S. Young praised the program of national advertising under discussion, and appealed to the industry at large to recognize the fact that action at present is not only desirable but absolutely necessary.

James F. Pollard, of the Seattle Gas Company, gave a short inspirational message on the desirability of starting to advertise now. He was remembered by the delegates as the speaker who had introduced the idea of the national advertising program at the general session of the convention on Wednesday.

Among other things Mr. Pollard appealed to the local advertising man to support the present program. He said that it was only natural for each advertising manager to want to spend his appropriation in his own territory, but that today the need for national

effort was so apparent that all should see the wisdom of supporting the national program. He also appealed to the combination companies for their support, and concluded with the admonition that companies should not fail to contribute because they would gain the benefits of the program anyhow. "Don't be a free rider," he urged.

B. J. Mullaney, vice-president of The Peoples Gas Light and Coke Company, Chicago, and a past president of the American Gas Association, stated that the industry was apparently nearer to national advertising than it ever has been. Several others present took part in the discussion—among them being William H. Hodge, vice-president, Byllesby Engineering and Management Corp., Chicago; Irving M. Tuteur, vice-president, McJunkin Advertising Company, Chicago; and M. E. Skinner, Niagara-Hudson Power Corporation, Buffalo, New York.

Mailing List Analysis

One of the prepared speeches of the afternoon session was "An Analysis of Gas Company Mailing List Methods," by Leonard J. Raymond, president of the Direct Mail Advertising Association, Inc. Mr. Raymond was unable to be present, and his paper was read by Clifford Pinkham, of the Dill and Collins Paper Company.

Mr. Raymond pointed out that during the summer members of the Association had sent to the Publicity and Advertising Committee comprehensive reports on their mailing campaign practices. Among the subjects covered were the sources and methods used in building mailing lists, how the lists are kept, the problems and practices in revising the lists and keeping them up-to-date, and the classifying of customers and prospects in special groups for selective promotional activity. Forty-four member companies contributed to this cooperative enterprise. The general purpose of the interchange of experiences was to reveal those direct mailing practices which are the most valuable and effective.



Advertising luncheon symposium which brought out vigorous discussion of national advertising

The survey indicated that four methods are used in making up mailing lists. The first is a survey made by meter readers and the second is a periodic or regular survey by salesmen. The third is a general meter list including every customer without getting any specific prospect information. The fourth is a list selected on a basis of buying power—that is, type of home, character of section, income groups, etc.

In conclusion Mr. Raymond said:

"Many companies, both large and small, have declared their lack of faith in direct advertising to produce direct sales. Of course it won't. Advertising, and particularly direct advertising, is a *step in selling*. In few cases can it do the job alone. While selling can be done without it, it can be better done with direct mail support.

"*Better planning* of direct advertising, and in most cases an *increased* use of it, plus proper coordination with salesmen, is bringing and will bring increased sales results. But direct advertising should be sent out not on the basis of what sales it can make in itself, but on how much acceptance it can create, how much background information it can put across, and how many *inquiries*, how many *interested leads* it can bring in to facilitate personal salesmanship.

"On that basis, by planning direct advertising still more carefully for each specific job you want it to perform—it can make a much greater contribution to the appliance selling

picture. It will do a better advance-selling job. It will help to avoid goose-chase calling on 'unknown' prospects. Percentages of sales to the number of calls made should be raised—and by more effective direct advertising you will get more value from the substantial investment of time, effort and money which your mailing list represents.

"In general, taking a backward glance over the reports received from member companies—and over this summary as well, we believe that, for the most part, Association members can be complimented on list organization, on list maintenance, on building up an effective sales machine. During the coming year we believe members can benefit from studying methods of coordinating their lists and personal sales force with direct advertising promotion. We would recommend too, consideration of ways in which

individual gas company promotion can be more closely tied up with manufacturers' literature, testing of copy-slants that will assure higher percentage of inquiry returns, and general study for the purpose of improving physical form, strategy, and effectiveness of direct mail material."

Mr. Obermeyer then outlined the special radio program which the Eastern Gas Companies are sponsoring. He explained the work of the "Mystery Chef," the radio star who will be the feature of this network program, and gave the details of the program.

At the conclusion of the joint meeting, the directors of the Public Utilities Advertising Association held a special meeting to develop ways and means of being of more value to its members. Special announcement by the P. U. A. A. will be made in the near future.

Soil Warming System Hastens Crops

A LARGE-SCALE soil-warming system has been installed at an agricultural college just outside London it was revealed by W. L. Boon at the annual meeting of the British Institution of Gas Engineers in London.

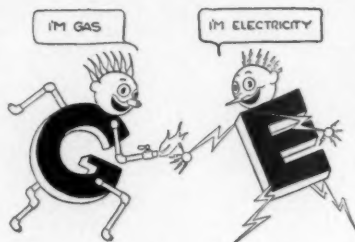
Experiments carried out showed that the growth of market garden produce and flowers can be advanced from four to six weeks by this method. According to Mr. Boon, the system is simple and consists of pipes laid about 16 in. deep, equally spaced and vented to give a uniform ground temperature through the medium of hot water circulation. The pipe system is serviced by a coke-fired boiler burning gas works' coke, automatically controlled by a thermostat, set in accordance with the ground temperature required.

"Ground warmed in this way," declared Mr. Boon, "will produce its crops at a high market value and, as it appears that the cost of warming the soil is more reasonable than glasshouse heating, the promise from experimental plots is sufficient to view the prospect of the development with optimism."

Gas and Electricity—The "Tiny Twins" of the Budget Family

SINCE early last summer, the Rochester public has become quite familiar with the Tiny Twins of the Budget Family—Gas and Electricity—whose alphabetical bodies have been featured as a sort of trade-mark in all Rochester Gas and Electric Company advertising—newspapers, radio, window display, and direct mail. As a matter of fact whether they are represented by a popular pair of harmonizers over the radio, or shown in newspaper or window display advertisements, or what not, these ingratiating twins have completely captivated the public and incidentally done a fine job of selling gas and electricity for the company.

The twins are the creation of Joseph P. MacSweeney, whose proud parental boast is that they cost much less to support than any other member of the Budget family. In fact, they are so dwarfed by other living costs, such as taxes, food, rent and



clothing, that they are barely discernible when drawn to representative

Humanized advertising when carried on consistently and intelligently, as in the case of the Rochester Gas and Electric Corporation, will go a long way toward establishing a clearer understanding of the vital service rendered by gas and electric companies. It can do much to alleviate many popular misconceptions now prevalent throughout the land.

Other notable campaigns along this same line which have been conspicuously successful in sales and goodwill building are the Chill Chaser campaign of the Memphis Power and Light Company and a group of southern companies, and the popularization of Mr. Therm by the Gas Light and Coke Company of London, England.

THE MONTHLY is indebted to Floyd Mason for the material on the exploits of the Tiny Twins.

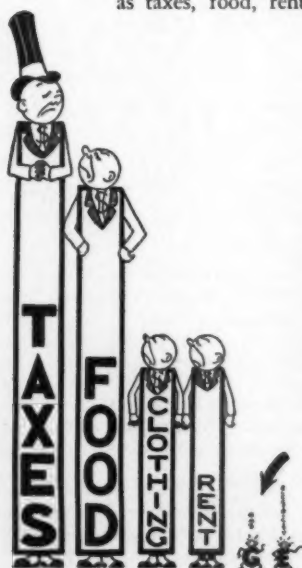
size beside other members of the family. They are midgets of expense but veritable giants in the service they render.

One of the most popular features of the program is a bi-weekly broadcast over Station WHEC by a well-known pair of harmonizers, Don Brown and Miss Pas Devine. They are heard Mondays and Wednesdays from 8:00 to 8:15 P.M. The couple make all their own musical arrangements, fitting them into the portrayal of the Tiny Twins. Here is the rollicking theme song with which they open all their radio programs.

I'm G,
I'm E,
I'm Gas,
I'm Electricity,
We're the Tiny Twins—
we're G. & E.,
We're at your service
constantly;
We heat your home, we
sweep your floor,
We make wash day an
easy chore;
We cook your meals,
we light your lamps,
Of all good servants
we're the champs;
We run your radio and
your clocks,
We freeze the ice in
your ice box;
We heat your water,
curl your hair,
We're the answer to a housewife's prayer;
We don't cost much, as you can judge it,
We're the cheapest things in the family
budget—
We're G—we're E,
We're Gas and Electricity.

The Budget Family

Our big brothers, TAXES, Food, Clothing and Rent,
Grow great on the money they've caused to be spent.
The biggest of all, brother TAXES, looks down—
"The Twins, they get smaller," says he with a frown.
"They always are handy; they work day and night,
Politicians attack them with main and with might,
But they don't notice ME—the biggest of all.
G. & E., they are tiny and willing, and yet
I'm jealous of all the attention they get.
But, perhaps that is better for ME after all,
For if I get attention, 'twill end in a squall
Which will stop ME from growing, and
THAT isn't all—
The voters will clamor to cut down MY size,
So let the Twins 'take it'—till people get
wise."



Another outstanding hit credited to the Tiny Twins was their participation in the company's 1935 Rochester Industrial Exposition display. The display was a colorful one and made use of both the pull of color and the attraction of mechanically moved units of which the Tiny Twins were essentially the leading factors. The exhibit comprised a central unit, flanked on either side by a supporting unit, altogether making a three-fold, yet harmonious ensemble.

The central portion showed at one side the imaginary home of Mr. and Mrs. Rochester, characters who have featured recent company advertisements of a cartoon type. From their home, tiny mechanical figures representing these two characters moved on a hidden track from their home to the "Tiny Twin Employment Agency" at the other end of the central layout, supposedly to employ these Tiny



Recent window display of the Rochester company. The vertical figures at either side of the poem show the comparative size of budget items based upon actual figures from the U. S. Census Bureau, the U. S. News and other reliable sources

Twins to do the bulk of the family's "chores," odd jobs, lighting, heating, etc.

Following action shows the Twins, mechanically actuated with arms swinging and legs moving, leaving the agency carrying various gas and electric appliances in their arms and after crossing the stage, entering the home of Mr. and Mrs. Rochester to "do their stuff."

The left side of the display was given over to the display of gas appliances, the gas refrigerator, gas range and automatic gas water heater. The right side featured electrical devices and equipment, the Twins occupying vantage points on each side and displaying messages telling what a lot of work they can do for even one cent.

At the top of the central unit, surmounting the words Rochester Gas and Electric, a huge thirty-six inch "penny" rolled along from one side to the other between large profile figures of the Twins. In the center, but underneath this top unit was a large chart showing what a small portion of the family budget actually goes for gas and electricity.

One of the factors of the aesthetic appeal which dominated the exhibit was the modern ornamental or pattern lighting which flashed on and off various combinations of colors and helped, together with the rolling "penny" and the moving figures to impel attention from both children and adult persons.

Another feature, much appreciated by the children, was the Tiny Twin



Two sections of the display at the Rochester Industrial Exposition. Above is shown the Tiny Twin Employment Agency at the left and the characters Mr. and Mrs. Rochester, animated dolls, who walk from their little bungalow at the right to hire the services of the Tiny Twins who appear later in the mechanical action bearing various gas and electric appliances. The section shown below was devoted to a presentation of gas appliances

(Continued on page 425)

Gas Industry Celebrates 10th Anniversary of Testing Laboratories

THE celebration of the tenth anniversary of the Testing Laboratories of the American Gas Association at the seventeenth annual convention of the Association in Chicago, was highly important in at least two respects; first, it marked the completion of ten years of successful operation by the American gas industry of a rigid system of self-imposed regulation in the public's interest through the enforcement of the gas appliance testing and certification program on a national scale; and second, it was important as a means of acquainting members of the gas fraternity more fully with the excellent facilities and broad scope of the work carried on at the Cleveland and Los Angeles laboratories.

Development Reviewed

The greater portion of the general session program on Thursday morning, October 17, was devoted to addresses by outstanding utility and manufacturer executives regarding the past ten years' accomplishments of the Testing Laboratories. Coupled with this, a copy of a bulletin entitled "For the Benefit of the American Gas Industry and 63 Million Gas Consumers," reviewing the steps leading up to the establishment of the Testing Laboratories and the work carried on by the Laboratories since 1925, was presented to each person attending the convention on Thursday morning. This elaborately illustrated bulletin, prepared on behalf of the Laboratories Managing Committee, set forth briefly and graphically the strides that have been made by the A. G. A. Testing Laboratories since their inception ten years ago.

The Laboratories' activities were further impressed upon those attending the convention by an outstanding stage display approximately 35 feet wide and some 16 feet high, which was used as the background on the speaker's platform during the entire convention. Figure 1 shows the view

By F. R. WRIGHT

A. G. A. Testing Laboratories

of the stage as it appeared during the convention program on Monday, Tuesday, and Wednesday, while Figure 2 shows the stage display as it appeared on Thursday morning during the program devoted to the Testing Laboratories. Figure 3 shows the Laboratories' display and booth in the foyer of the Palmer House in Chicago leading to the main ballroom where the main sessions of the convention were held.

Displays Revive Interest

The Laboratories' displays, their tenth anniversary bulletin, and the addresses that were given relating to the Laboratories' work resulted to a marked degree in a rejuvenation of interest in the Testing Laboratories' program, a rededication of the Laboratories to the proposition of promoting and developing the gas industry to the end that it may serve to the fullest possible extent the best interest of the public, and a reiteration, in principle at least, of the fact that appliances which cannot meet the national basic requirements enforced by the Laboratories are not fit to be used and all practical means should be employed to prevent their sale and use.

The benefits that the gas industry has enjoyed as a result of the establishment and operation of the Testing Laboratories of the American Gas Association were ably reviewed by two of the industry's leading executives, one from the Eastern section of the United States and the other from the Pacific Coast, namely, George E. Whitwell, vice-president of The Philadelphia Electric Company and A. F. Bridge, vice-president of the Southern Counties Gas Company of California, both members for many years of the Laboratories Managing Committee. The value of the gas appliance testing and certification program enforced by the Testing Laboratories from the viewpoint of gas appliance manufacturers was briefly but forcefully discussed in an address by one of the industry's outstanding appliance manufacturers, John A. Fry, president of the Detroit-Michigan Stove Company and chairman of the Manufacturers' Section of the American Gas Association.

Whitwell Commends Progress

Mr. Whitwell, speaking before the convention on Thursday morning, said, "Those who planned the Testing Laboratories, which were established in Cleveland in 1925, knew exactly where they wanted to go, had very definite ideas as to how to get there,



Figure 1



Figure 2

and put up their own money in order to obtain their objective." Commenting further, he said, "As we look back today, I would say that the Laboratories' original objective has been reached and past. New objectives have been set and are being approved. The gas industry knows exactly that which has been accomplished and no money has been used except that of interested parties, who have received a full measure of return for their expenditures."

"I can think of no better illustration over the past ten years," said Mr. Whitwell, "of the fine and splendid results that come from constructive individual initiative and from a high order of faith in this country of ours, than the establishment, in 1925, of the A. G. A. Testing Laboratories and the fruition, since then, of so many of the hopes and ambitions of those who made possible this outstanding landmark in the gas industry's development." He went on to review briefly the work which has been accomplished by the Laboratories in the past ten years in the fields of standardization, appliance testing and inspection, and research. Speaking of research he said, "Without an accurate knowledge of its business no industry can be assured of lasting success. Research of the kind that the Laboratories have carried out and that will be accomplished in the future, supplies such information. To me research is even more basic. It is the economic cornerstone on which the United States has builded and on which industry is again rearing the structure of business

advance and confidence out of the ashes of the depression."

A. F. Bridge Speaks

The opening statement of A. F. Bridge in his address before the convention emphasized how relatively few people are familiar with the Laboratories' activities. "Approximately five years ago," he said "when I became a member of the Laboratories' Managing Committee, I had little conception of the extent of the Laboratories' operations and their effect on our industry's progress. Like most other operating men, I felt that the Association's appliance testing and research activities served a useful purpose, but did not realize the extent to

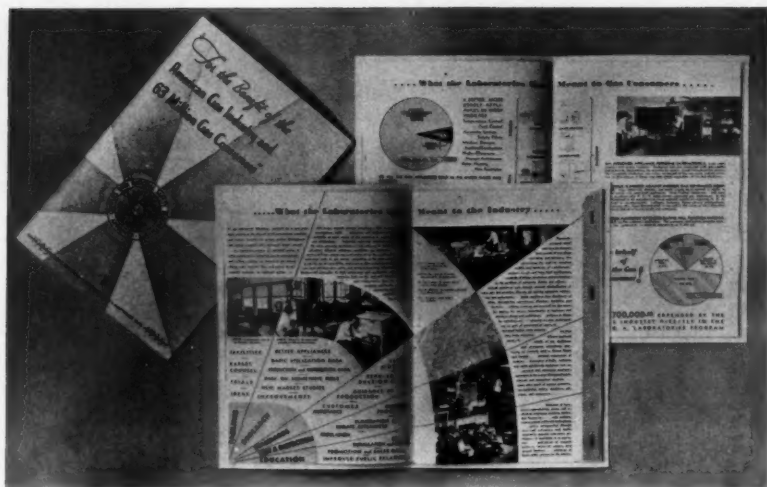
which they influenced the character of our service. This viewpoint was not unusual, for I have found that unless one is closely in touch with the ramifications of the Laboratories' work, he is apt to assume that advancement in the utilization of our products has been due to unguided development incident to the growth of our industry."

Mr. Bridge spoke on "A Pacific Coast Man's Viewpoint of the Testing Laboratories" and while he discussed primarily the work of the Pacific Coast Branch Laboratory, he outlined clearly and effectively the valuable benefits that have resulted to the industry, particularly on the Pacific Coast, from the Laboratories' operations since their inception ten years ago. Among the principal points brought out by Mr. Bridge are the following:

1. "One of the most valuable accomplishments of the Laboratories' program has been the bringing of the eastern and western sections of our country more closely in accord in the matter of gas utilization practices,
2. "The establishment of a Pacific Coast branch laboratory in Los Angeles has resulted in better and quicker service to appliance manufacturers, a large saving in cost to them, and valuable assistance to both utility and manufacturers in clarifying test results and procedures as well as serving as a central source of information on all gas utilization problems,
3. "The branch Laboratory on the Pacific Coast has served the gas industry of the West effectively through consultations in regard to matters of research and



Figure 3



Attractive 40-page, 2-color booklet commemorating the tenth anniversary of the Testing Laboratories

the transmission of problems developed by gas companies and manufacturers to the Cleveland Laboratory for investigation and report.

4. "The Laboratories acting as a national testing agency have rendered extremely valuable assistance in supplying unbiased and authentic information on the relative merits of gas and electric service for cooking and water heating purposes.

5. "Another Laboratory activity of great practical value is represented by the findings of the pipe joint committee which were based on the Laboratories' research covering methods of testing welded and mechanical joints. The fundamental information disclosed can be applied with minor modifications anywhere in the United States or Canada."

Mr. Bridge also stressed the value of the Testing Laboratories' work on technical questions involving the effect of gas pressure and heating value variations upon appliance performance. He pointed out that a large part of the basic knowledge available on this subject is the direct result of our industry's general program of mixed gas research carried out at the Testing Laboratory in Cleveland.

"The information and data that has been made available over a period of years as a result of the routine testing of appliances has," said Mr. Bridge, "been extremely valuable to the industry, and the gas appliance standards which have been developed by committee work in conjunction with the Laboratories have been invaluable aids in the steady growth of the gas appliance manufacturing business. In

designing new appliances, manufacturers not only have national standards to guide them but also a laboratory where tests for compliance with these requirements can be made. Both large and small manufacturers, therefore, may perfect their appliances before placing them on the market, as contrasted to the procedure ten years ago of letting the owner find the imperfections and complain about them to the manufacturer or gas company."

Appliance Performance Raised

Mr. Bridge went on further to say that "Credit for the general elevation of appliance construction and performance may be attributed to the Laboratories' activities supplemented by the attention and support given this project by gas companies, manufacturers and city building officials." Illustrating the value of the Laboratories' rigid and effective inspection program, Mr. Bridge cited an incident where one appliance manufacturer completely reorganized his production and inspection methods because of the inefficiency and lack of control disclosed by the Laboratories' inspectors. In summing up Mr. Bridge said:

1. "The Laboratory has, during the first decade of its existence, risen to a point where it is respected and supported by the great majority of our gas appliance manufacturers and member gas companies."

2. "Through its standardization and testing program, it has contributed im-

measurably to the advancements made in the utilization aspects of our business," and

3. "Most important of all, it has become one of the most powerful aids for improving our service, and by such means securing and maintaining customer good will."

John A. Fry spoke on the Laboratories' activities from the viewpoint of appliance and accessory manufacturers. He stated that while ten years ago the idea of developing national standards and their enforcement by a testing laboratory was looked upon with extreme disfavor by appliance manufacturers, today manufacturers are, with few exceptions, solidly behind the Laboratories. He further stated that he felt safe in pledging their support to the Laboratories in the future.

Mr. Fry pointed out that appliance manufacturers have gotten along much better since the establishment of the Laboratories and that the Laboratories' work in the fields of appliance testing and requirements research had been of invaluable assistance in the development and improvement of gas burning equipment. He predicted that the Laboratories would go on to greater accomplishments in the next decade than they have enjoyed in the past.

JOHN A. FRY



John A. Fry

John A. Fry, who has been re-elected chairman of the Manufacturer's Section, is president of the Detroit-Michigan Stove Company.

Mr. Fry's entire business career has been with the Detroit-Michigan Stove Company. He started as timekeeper in January, 1905, and advanced steadily to the following positions: paymaster, in 1909; superintendent, January, 1916; general manager, February, 1920; and vice-president in December, 1925. He was elected president in March, 1935.

Mr. Fry is also a director of the Detroit-Michigan Stove Company and of the Detroit Board of Commerce.

He is a member of the Detroit Club, the Detroit Golf Club, and the Detroit Athletic Club.

Affiliated Association Activities

Pennsylvania Natural Gas Men's Association

THE Secretary, B. H. Smyers, Jr., has announced the appointment of the following committee chairmen for the year: Constitution and By-Laws, T. B. Gregory; Finance, A. J. Newman; Membership, S. W. Meals; Policy, T. B. Gregory; Program, F. B. Jones, and Sales, E. E. McCormick.

Public Utilities Association of West Virginia

FRED W. SAMWORTH of Huntington, president of Ohio Valley Electric Railway Company, was elected president of the Association at the annual meeting. Other officers elected were: A. J. Darrah, vice-president; J. K. Buchanan, vice-president; A. Bliss McCrum, secretary, and G. B. Moir, treasurer. The newly elected officers assume their duties at the beginning of the fiscal year, December 1, 1935.

Mr. Samworth has been well and favorably known as a transportation executive in West Virginia for a number of years. He has a host of friends among the utility and business interests in the state.

Empire State Gas and Electric Association

ALARGE number of executives of the gas and electric industry in New York and near-by states attended the thirtieth annual convention of the Empire State Gas and Electric Association at the Westchester Country Club, Rye, N. Y., October 4 and 5.

Clifford E. Paige, president of The Brooklyn Union Gas Company and retiring president of the Association, presided at the opening session. Prior to the meeting, Ernest R. Acker, president of the Central Hudson Gas and Electric Corp., was elected president for the coming year with Charles E. Bennett, president of the Binghamton Gas Works, as vice-president.

Following the President's Address by Mr. Paige, which opened the meeting, Dean Carl E. Ladd, of the New York State College of Agriculture, spoke on rural electrification. He was followed by Percy S. Young, president of the American Gas Association, who presented a message from the Association. Other speakers at this session were: Bernard F. Weadock, representing Edison Electric Institute, and Colonel Jackson Dykman, of the law firm of Cullen and Dykman.

Incoming president, E. R. Acker, presided at the second session which consisted largely of papers on commercial and sales planning subjects. T. K. Quinn, vice-president of the General Electric Company, spoke on Modern Homes. W. H. Carrier's paper on Air Conditioning was presented by W. A. Stacey in Mr. Carrier's absence.

Other addresses presented at the last session were by Alvin E. Todd, executive vice-president of the American Management Association, on "Sales Planning and Selling under Present Conditions," and by Morse Dell Plain, president of the American Street Illuminating Company, on "Intelligent Sales Effort and Better Public Relations." Merwin K. Hart, president of the New York State Economic Council, closed the meeting with an appeal for more aggressive action in regard to the support of private enterprises.

Wisconsin Utilities Association

GAS and electric divisions of the Technical and Operating Section of the Wisconsin Utilities Association will hold their annual convention November 11 and 12 in Green Bay, Wisconsin. Headquarters will be at the Northland Hotel.

Opening Monday morning, November 11, in a joint session, the meeting is expected to be equally as successful as the recent record convention of the Commercial Section. Some of the subjects and speakers on the program of the joint session are: Coordinating Technical and Sales Efforts, G. V. Rork, president, Wisconsin Utilities Association; Legislation Affecting Utilities, A. J. Whitcomb, Milwaukee; Possible Operating Problems as a Result of Promotional Activi-

ties, T. A. Brown, Madison; and Accident Prevention in Public Utility Work, Voyta Wrabetz, Madison. In addition there will be a discussion at this session of the application of the gas and electric diversion law.

Gas division sessions start Monday afternoon at 2 P.M. with the Chairman's Report by L. P. Ziebell, Green Bay. This will be followed by reports of representatives on Managing Committees of the American Gas Association. Important topics to be discussed at this session include: Bargain Rates, H. I. Miller, Oshkosh; Coal as a Generator Fuel, L. J. Willien, Chicago; The New Gas Flood Light, W. M. Blinks, Kalamazoo; Opportunities in the Gas Business, F. C. Armbruster, Chicago; and Measurement of the Specific Gravity of Gas, Professor O. L. Kowalke, Madison. There will be a dinner Monday evening at which Phil S. Hanna, Editor of the Chicago Journal of Commerce will be the principal speaker.

The final session of the gas division, Tuesday morning, will be devoted to a round table discussion covering the following general subjects: Production, Distribution, Services and Meters, and Servicing Appliances. Prominent men are slated to lead the discussions.

General Nominating Committee Elected

The following members of the American Gas Association were elected to the 1936 General Nominating Committee: F. C. Freeman, Providence, R. I.; R. W. Hendee, Tulsa, Okla.; A. Dean Dudley, Syracuse, N. Y.; Glenn R. Chamberlain, Grand Rapids, Mich.; H. L. Masser, Los Angeles, Calif.; and F. A. Miller, Bradford, Pa. The committee will report at the next annual convention.

Convention Calendar

NOVEMBER

- 6-9 Fifteenth Gas School and Conference
Iowa State College, Ames, Iowa
- 11-12 Wisconsin Utilities Association, Technical and Operating Sections
Green Bay, Wis.
- 11-14 American Petroleum Institute
Biltmore Hotel, Los Angeles, Calif.

DECEMBER

- 11 The British Gas Federation
London, England

1936

FEBRUARY

- 13-14 New England Gas Association
Boston, Mass.

MARCH

- 2-6 Regional & Group Meetings of A.S.T.M.
Pittsburgh, Pa.
- June 29-July 3 American Society for Testing Materials
Atlantic City, N. J.

JULY

- 8-10 Canadian Gas Association
Vancouver, B. C.

NATURAL GAS DEPARTMENT

WILLIAM MOELLER, Jr., Chairman

A. E. HIGGINS, Secretary

GEORGE E. WELKER, Vice-Chairman

Present and Future Supply of Natural Gas



J. B. Tonkin

THE natural gas industry, in its present state of wide-spread and growing usefulness in its service to consumers, can best be considered for its future possibilities in the light of its early development and expansion. There is no room for pessimism in a frank examination

of the story of that development and expansion. Rather there is a solid foundation for optimism in the future of the industry as we view the manner in which expansion and increased output have followed the depletion and, in some cases, abandonment of fields which once were thought to be the richest depositories of gas.

As these original sand levels and fields were exhausted, beginning with the first wells in the Pennsylvania district, other territories became sources of supply and wells were driven further and further into deeper sands by adventurous and confident men.

While we are all aware that natural gas is not everlasting, nevertheless we know from the resources available in present fields and the probability of the successful drilling of new wells that we do have in prospect an adequate supply for many many years to come. This is one of the encouraging thoughts I wish to emphasize to those engaged in the distribution and the marketing of gas, especially in those industrial districts where natural gas for domestic and manufacturing use is something of a new idea.

As an example I might cite the city of Chicago in which we are now meeting. Estimated gas reserves in the Amarillo Field, Texas, is 16,000,000,000,000 cubic feet. Chicago is now receiving its supply of natural gas from this field. This is an almost incomprehensible supply, even to those of us who have been accustomed to big figures through the spending and taxing programs of our national administration.

Basing consumption on the averages of such cities as Pittsburgh, where natural gas is widely used, that portion of the Amarillo supply which is available to Chicago is sufficient for more years than even the youngest man here present will be engaged

Chairman's Address before Natural Gas Department, A. G. A. Convention, Chicago, October 14, 1935.

By J. B. TONKIN

President, The Peoples Natural Gas Co.,
Pittsburgh, Pa.

in the natural gas business. It must be remembered that the natural gas industry, now well organized, is not wasting its product as it did in the early days when large wells were permitted to blow into the air indefinitely, thus allowing millions of cubic feet to escape.

There are supporting statistics dealing with the discovery of fields, the expansion of natural gas uses, the depletion of old fields, and the opening of new ones, with a further expansion in natural gas uses, to support the statements I have made. Some of these I will give you briefly.

While as early as 1821 natural gas was used to some extent at Fredonia, New York, it was not until 1872 when the Newton gas well was sunk in Crawford County, Pennsylvania that the natural gas industry may be said to have had its real beginning. Other wells in the same period were sunk in other sections of Pennsylvania and natural gas became more than an experiment for domestic and industrial purposes. Pittsburgh, as one example, has been an increasingly larger user of natural gas since 1874.

In 1878, among others, the famous Haymaker well at Murrysburg in Westmoreland County, Pennsylvania was drilled. The sandstone from which this gas was taken was struck at a depth of 1330 feet and took the name of Murrysburg sand. In view of some figures I shall cite within a moment or two, I wish you would remember that 1330 foot well.

Pittsburgh, of course, is in the heart of the great Appalachian oil and gas field which contributes to the use of the product. There was an exceptional drain on the resources of these early wells owing to the expansion of gas consumption and even before 1900 there were some men, first in the industry, who believed that the supply was failing and quit the business.

The answer to this timidity was an expansion of operation throughout the entire Appalachian field and deeper drilling with the result that in 1906 Pennsylvania reached its maximum annual production of 138,161,000,000 cubic feet of gas. But Pennsylvania was using 162,000,000,000 cubic feet of gas, and the answer to this deficit was additional production from neighboring states in new fields combed by gas pioneers.

Until 1923 the Appalachian field was the biggest producer in the United States, 36 per cent of all the gas consumed in the country flowing from Pennsylvania wells. Then began the steady retrogression, until in 1933 Pennsylvania produced only 4 per cent of the United States total. The state of Texas in 1933, embracing the Amarillo field, produced about one-third of all the natural gas consumed in the United States.

Most of the early drilling in the Appalachian field went no further than a two-thousand foot limit. As exhaustion came to many of these wells, due particularly to the heavy drain on the gas companies during the war period, some natural gas companies, not conceiving the greater discoveries that lay deeper in the earth, were impelled to discontinue the use of natural gas to certain types of industries. Three large companies in the east built plants for the production of manufactured gas.

But the more confident natural gas producers and operators, not satisfied that the two thousand foot level was the ultimate in gas resource, drilled deeper and manufactured gas plants were found unnecessary and were abandoned and the territories served by these companies were regained to the natural gas industry. Drilling for natural gas has been pushed, depending upon the demands, with rewards going to those daring operators who were willing to venture deeper and deeper to find productive wells.

The original drilling throughout the Appalachian field was to and through the Murrysburg and Venango group of sands where large volumes of gas were encountered. The average well depth was 1500 feet. When this supply began to "play out" the wells were drilled deeper, to and through the Speechley horizon, with an average depth of 2500 feet, and later through the Bradford group of sands with an average depth of 3500 feet.

In 1920 a well was drilled near Ligonier, Pennsylvania, and encountered a supply of gas at 6822 feet in the Oriskany sand. This discovery led the way to additional Oriskany sand production.

In 1930 a company in northern Pennsylvania was using a mixed gas and as their supply of natural gas for enriching purposes was getting low, they decided to make a deep test to the Oriskany sand in Tioga County, Pennsylvania. This venture was successful and at a depth of 4000 feet a twenty million cubic foot well was obtained with a rock pressure of 1700 pounds.

Additional production from the Oriskany sand has been obtained in New York state and in Potter County, Pennsylvania. The depth to the sand in Potter County is about 5100 feet. Very recently, gas was encountered in the Oriskany sand near Charleston, West Virginia, at a depth of 4800 feet and in a well in Columbiana County, Ohio, near the Pennsylvania state line, at a depth of 4400 feet.

Two interesting tests are being drilled at the present time, one in Fayette County, Pennsylvania, and another in Beaver County, Pennsylvania.

On account of the Oriskany development, where wells with open flows of 75,000,000 cubic feet and rock pressures as high as 2200 pounds have been encountered, we have heard no complaints of natural gas shortage in the Appalachian field for the past fifteen years, and due to the recent gas well developments in Texas, Oklahoma and California, from depths up to 12,000 feet,

there is no evidence of shortage throughout the entire United States.

Many additional uses of natural gas have been developed during the past several years and the prospect of an adequate supply for many, many years to come shows that these uses can be expanded and extended. The gas refrigerator and air conditioning are new uses for natural gas. A marked improvement has been made in the design and operation of gas-burning equipment and the improvement of gas for domestic heating plants is increasing.

With very close cooperation between the manufacturer of gas burning equipment and distributors, together with unification of effort by our engineers and the engineers of large industrial consumers, much has been accomplished in the building up of additional gas loads.

It must be understood of course, that natural gas cannot now be produced as cheaply as it was thirty years ago. The cost of drilling a well then was \$5,000. Today the cost of drilling a deep well in the Appalachian field is \$25,000 to \$50,000 while in the west and southwest it amounts to \$100,000.

Necessarily I have given you only a brief summary of gas production problems. I have burdened you with the fewest possible statistics. What I have tried to point out is that the industry has constantly progressed through deeper drilling to secure supplies, and through the development of new uses for that production.

Let me restate what I said earlier.

We are aware that natural gas is not everlasting, but we do have an adequate supply, not only for now, and the immediate future, but for many, many years to come.

During the past year I have had the honor of being chairman of the Natural Gas Department, although it was of no choosing of mine, I considered it a great honor and I wish to take this opportunity to express my deep appreciation. When I assumed the position, I had the assurance of my friends, that they would assist in every way possible, and I want to say that their promise has been kept one hundred per cent.

Russians Fire Coal Mine To Make Gas

TO save the cost of mining coal and transporting it to consumers, Russia is trying out the plan of burning it underground and supplying near-by cities with the gas thus produced. One experiment now is under way at Lisichansk. Engineers installed a gas collecting system in a large mine, laid a pipe line into the town and then set fire to the extensive veins of coal. The first gas proved of low heating value, but the quality improved as the fire grew.

L. C. Smith Heads Harrisburg Company



N. B. Bertolette

United Gas Improvement Company system after an absence of 10 years. Mr. Smith was assistant to the managing director of the

N. B. BERTOLETTE has resigned as president of The Harrisburg Gas Company to become president and general manager of The Hartford Gas Company, Hartford, Conn. He has been succeeded at Harrisburg by Louis C. Smith who returns to the

American Gas Association from 1931 to 1933.

Mr. Bertolette was elected president at Harrisburg in April, 1930, after an unusually broad experience in public utility management. Following his graduation in mechanical engineering from Drexel Institute, Philadelphia, in 1911, he

held several important managerial positions with the Philadelphia Suburban Gas & Electric Company. When that company, with others, was merged into Philadelphia Electric Company in 1928, Mr. Bertolette assumed an important position with the latter company, which he held until he went to Harrisburg.

Mr. Smith was graduated from the University of Pennsylvania in mechanical engineering in 1907, and started with U. G. I. on May 18, 1908, in Philadelphia. He spent three years in distribution and production work there. During his subsequent connections with U. G. I. he had charge of the inventory and appraisal of the distribution system of the Omaha Gas Company in 1911 and 1912, and became engineer and later manager of the Fulton County Company.

In 1925, when Mohawk-Hudson system was developed, and U. G. I. sold its interest in Fulton County Company, Mr. Smith became president of the latter company. In 1927, he was elected a vice-president and division manager of the New York Power and Light Corporation handling operations in the Mohawk and Schenectady divisions. On January 1, 1931, he joined the staff of the American Gas Association and, more recently, was associated with the Warner Quinlan Company, a Cities Service subsidiary.

WILLIAM MOELLER, JR.



William Moeller, Jr.

William Moeller, Jr., who has been elected chairman of the Natural Gas Department for the Association year 1935-1936, is vice-president in charge of natural gas production

and transmission of the Southern California Gas Company, Los Angeles.

Mr. Moeller graduated in mechanical engineering from the Stevens Institute of Technology, Hoboken, N. J., in 1906. After leaving the Kansas Natural Gas Company in 1914, he became chief engineer for the Empire Company, Bartlesville, Okla., and from there went to the Midway Gas Company, Los Angeles. After consolidation of that company with the Southern California Gas Company in 1928, he became director and vice-president.

Since going to California, Mr. Moeller has been active in the Pacific Coast Gas Association, serving as president in 1935. He was a member of the Natural Gas Association of America in 1908 and has been active in Natural Gas Department affairs since affiliation with the American Gas Association. He is a member of the Managing Committee, the Main Technical and Research Committee and various technical subcommittees.

ACCOUNTING SECTION

F. L. GRIFFITH, Chairman

H. W. HARTMAN, Secretary

E. J. TUCKER, Vice-Chairman

Land Lease Accounting of the Columbia Gas and Electric Corporation

By **ALFRED WATSON**

Columbia Engineering Corporation

THERE is a great deal of activity in connection with land leases applying to natural gas and oil companies, as a large number of rentals and royalties must be paid periodically in accordance with the terms of the lease or other agreements. Much correspondence or other advice is also brought about by the acquisition, renewal, extension, expiration or surrender of leases, and it is important that all records be complete and up to date in all respects.

In view of this it will be noted from the following brief explanation of a land lease machine accounting system that, insofar as sources of information are concerned, a distinct division is made between the details contained within the filing and accounting records. (The author will be very happy to supply copies of forms described in this article to anyone who will write to him at 61 Broadway, New York City.)

The lease file, which becomes a historical record, contains the original lease and other documents, such as supplemental agreements, assignments, etc., affecting the terms or conditions of the lease. Other than figure details extracted for the accounting records, these documents consist of written words, which, if transcribed to other records, could only be verified by visual check. There is therefore a reduction in work and more assured accuracy if future details are secured from the original papers. An efficient filing system is therefore of much value in order that executives, field representatives and others may, as occasion requires, be furnished with prompt and complete information as to the status of any lease.

The accounting record is detailed to support acreage investments, statistics and classes of leases. This is all figure work and in the process of accounting is automatically proven, currently building up figure facts to complete reports, etc.

Explanation of System and Procedure

To simplify the recording, numbers are used to identify companies, leaseholders, classes of leases and interests in leases.

All records, with the exception of addressograph plates, are filed in fireproof equipment. Indexes are in visible trays

Contribution of Accounting Machines Committee.

contained in cabinets; leases are in three drawer counter-height files and ledger cards in tub trays.

Addressograph plates are filed by due dates in geographic order. They are used for preparation of checks in payment of delay rentals, royalties, miscellaneous rentals, casinghead gas, measured gas and oil.

Two index records are used, one for alphabetical and one for geographic reference. The alphabetical index contains names and addresses of all parties interested in each lease. The geographic index refers to location of each lease and

is classified as to unoperated and operated leases. The acreage in each lease is shown on the geographic index and kept in balance with ledger records. Details as to acreage can be furnished from this index without reference to the ledger records.

A folder containing original lease and other documents of importance pertaining to the lease is filed in the same numerical sequence as the ledger cards.

Accounting Procedure

New leases or advices changing leases are approved by the land agent, and classified as to interests by the land department. Required details are then noted on addressograph advice. This is sent to the addressograph unit for making of plate, if a new lease, or correction if plate is in file. As evidence of immediate and proper change, an impression is made on the back of this advice. If a new lease, an impression is also made on a folder for the lease file. When returned, the bookkeeping unit proceeds to prepare the necessary records. If a new lease, ledger card and indexes are typed. These are then checked and lease and classification numbers machine stamped on the ledger sheet and lease folder. If the change applies to a lease previously recorded, the indexes and ledger card are accordingly corrected.

The indexes and folder are then filed and the ledger card together with supporting papers passed to typist for entry in the lease register.

A lease register is maintained for each company. All details of new leases or changes affecting acres, costs, delay rentals, royalties, or dates of leases previously recorded are entered in the register. Where the change affects only payee, names or addresses, no entry is made in the lease register, the correction being noted on the ledger card only. Lease register is a carbon copy of the original typing which is on a unit ticket.

A unit ticket posting media is inserted in a special feed in the typewriter each time an entry is made in the lease register, the details on the ticket being carbonized on the lease register. Upon completion of the entries a total of acres, costs, rentals and royalties is noted on the register. The register sheet and the ledger cards applying are then passed to

FRANK L. GRIFFITH



F. L. Griffith

Frank L. Griffith, newly elected chairman of the Accounting Section, is vice-president in charge of accounts of The Peoples Gas Light and Coke Company, Chicago. He

first became a member of that company's organization in 1919. Eight years later he was elected assistant secretary and assistant treasurer which position he held until his election as vice-president in the early part of 1934.

Mr. Griffith had an active part in the pioneering of the change by The Peoples Company from the volumetric to the therm basis of billing, several aspects of which he has discussed in papers before the Association. For the past three years he has served as a member of the Managing Committee of the Accounting Section and, during 1935, as vice-chairman of the Section and chairman of the Uniform Classification of Accounts Committee.

the bookkeeping machine operator for posting.

Ledger cards are posted to agree with the lease register. When complete, the proof sheet and ledger cards are referred to control clerk for verification of proof and refiling of ledger cards. To more readily distinguish the kind of lease, the lease numbers applying to delay rental and royalty leases are in black ink, deeds are in green ink and miscellaneous in purple ink. The classification number on all is in red ink.

When the last entry for the month is posted to the lease register, the unit tickets are sorted as to unoperated and operated leases and by classes. These are totaled and the totals by classes noted on lease register as a proof summary of all entries and for completion of journal vouchers, and reports to record changes in acreage investment. A resort of the tickets is then made by Township, County, and State, and each unit ticket entered by typewriter in detail column of the acreage control. These are then totaled and the total applied to prior month's total to arrive at a new balance as of current month. This record is arranged and indexed to show totals for each town, county, state, and total for all.

Unit tickets are resorted to classification of interests and posted in detail column of statistical record which is arranged with a sheet for each classification in the same geographic order as the acreage control.

Maturity Record

Unit tickets are finally arranged in date order and posted to maturity record. This record serves two purposes, being used by the land department as a record of expiration of leases and by the tax division as a record of amortization of leaseholds. The unit tickets are then referred to the map and engineering departments for notation of locations or other details on maps, etc. When returned to the land department the unit tickets are filed by expiration dates to be referred to lease-men within six months of maturity date as advice that lease is nearing expiration.

As there are a large number of ledger cards, a control card for approximately each 500 accounts is maintained. This divides the entire number of ledger sheets into several divisions permitting the rotating of balances.

Controls are balanced monthly for proof of total changes as recorded in registers. This is arrived at by listing the old and new balances only of the sheets affected during the month.

The majority of new leases and practically all renewed leases are accepted in advance of the date the lease is to be in effect. To control these, when the lease is approved, all records are prepared the same as if the lease is immediately effective. The entry, however, is made in the lease register in the month in which

the lease applies. The ledger card and addressograph plate are filed in an advanced dating file and controls adjusted when the ledger sheet and addressograph plate is transferred to the current file.

A few days in advance of the beginning of the month, a check for each rental or royalty to be due during the month is prepared from the addressograph plates. The checks for each day and which are in due date order are placed in an envelope. When received by the land department, an adding machine listing is made for comparing the totals with the respective controls showing amounts due each day. The lease number is also listed from the checks to the back of this same tape, for proof of posting the payment to the correct ledger card. When proved, the checks and adding machine tape are replaced in the envelope and filed for release in accordance with mailing schedule.

A summary of prepaid rentals is then typed, the daily total column carbonizing to an advice sheet, which is sent to the

treasurer's department as advance notice of amount of rentals and royalties that will be due each day. The distribution of charges to Expense accounts, etc., of these payments is also controlled by account numbers, district numbers, etc., and the detail of same as reported to the accounting department is carbonized on the back of this summary.

When due for payment, the check which, with the exception of the number, was completed by impression of addressograph plate, is placed in the bookkeeping machine together with the ledger card. The bookkeeping machine automatically prints the check number in red on the check and this number, together with date paid to, lease number, and amount are posted to the ledger sheet, carbonizing to check register which is retained in the machine until all checks are posted. Totals are then printed on the check register and verified with the daily amount as shown on the summary

(Continued on page 425)

Accounting Luncheon Conferences Attractive Convention Feature

THE Accounting Section luncheon conferences held at the Chicago convention of the American Gas Association were considered even more successful than in 1934. Nearly four hundred attended the four conferences and they were described as one of the outstanding features of an outstanding convention.

Gas men who live and work thousands of miles apart found that their accounting problems are as close as the Siamese Twins.

The four conferences were under the direction of H. A. Ehrmann, of the Consolidated Gas Company of New York, chairman of the Luncheon Conference Committee of the Accounting Section.

One hundred persons were at the General Accounting Luncheon Conference which was conducted under the leadership of Francis B. Flahive, Columbia Gas and Electric Corporation. The program laid out for this conference provoked a great deal of discussion and most of those present took part in all controversial matters. Store expenses percentage policies, internal audits, and cash discounts attracted a great deal of attention. The matter of leased appliances also proved to be a live one, with interest during construction and contributions for extension literally trying for second place.

The Customer Accounting Luncheon Conference, under the leadership of Thomas S. Lever, Jr., of The Philadelphia Gas Works Company, was also a great success. Approximately one hundred convention delegates were present and they participated wholeheartedly in the interesting discussion which covered the whole field of customer accounting. An atmosphere of uniformity prevailed and "a spade was called a spade."

The always important topic of collections received most attention, with particular emphasis on incentive wage plans for collectors. Several delegates described their incentive plans, and they were subjected to a bombardment of questions.

Other subjects which received close attention were customer deposits, final billing methods, house heating budget plans, the stub *vs.* the register sheet plan, and credit records.

The popular Customer Relations Luncheon Conference attracted ninety persons. E. P. Prezzano, Westchester Lighting Company, Mt. Vernon, New York, presided. Everyone took him at his word when he asked to have free and open discussion.

The subjects discussed were deposit policies, giving of letters of credit to customers moving from one company to another, the use of the word "complaint," and the rendering of estimated or averaged bills where regular readings could not be made. The discussions were entered into heartily and proved very interesting.

The Office Management Group Luncheon Conference went over in great style under the capable direction of Dwight Griffin, of the Public Service Company of Northern Illinois, Chicago. Under his guidance the delegates exchanged views and experiences on the following subjects: use of office personnel as sales people in offtime hours, selection of supervisors, employee problems, and married women in business.

The consensus was that the Accounting Section Luncheon Conferences were again a great success and that they should be continued as a valuable feature of the convention. Hats off to the committee in charge which ably assisted Mr. Ehrmann.

COMMERCIAL SECTION

C. E. BENNETT, Chairman

J. W. WEST, Jr., Secretary

F. M. BANKS, Vice-Chairman

What the National Gas Range Sales Contest Accomplished for the Winning Company

THE Memphis Power & Light Company was winner of first prize in Division Three of the National Gas Range Sales Contest conducted by the American Gas Association this spring.

It is a combination gas and electric company having approximately 32,600 residential gas and approximately 41,700 residential electric customers, serving Memphis and Shelby County, Tennessee. The gas mains cover practically all of the City of Memphis and the suburban area adjacent to the city limits. The population served with gas approximates 260,000, 30% of which is negro with very limited purchasing power.

Prior to 1929 the company sold gas manufactured within the city limits and distributed through a typical low-pressure distribution system. The B.t.u. content of the artificial gas was 530. The rate for domestic use averaged around \$1.24 per 1,000 cu.ft. Although little gas was used for heating or industrial purposes during that phase of the company's business life, the net earnings were satisfactory and prospects for continued earnings seemed to be good. However, as did others in a comparable position, the company fell in line with the march of progress and made a contract with the pipe line company which was ready to serve the city, and in January, 1929, began serving natural gas of approximately 960 B.t.u. from the Monroe fields of Louisiana. Of course, lower rates per M cu.ft. were established and these, with the reduced consumptions of all customers due to the increased heat content of the gas delivered, cut down the sales with consequent reduction in earnings.

Sales Increase

The solution of the problem, as in all such predicaments, was to increase our selling activities. Immediately, commercial and industrial and house heating divisions of the sales department were established and the residential selling force was increased. In the face of the discouraging business conditions that have existed during the entire period of our existence as a natural gas distributing company, the sale of gas has steadily increased, and at present the company serves practically all the industries in the city and in the neighborhood of 6,000 domestic customers using gas for house heating. Even so, the return on the investment has never reached

By W. H. McINNIS

General Sales Manager
Memphis Power & Light Company

the point where it was during the latter years of manufactured gas distribution.

As you gentlemen know, replacement of gas ranges during the years 1930 through 1934 was practically at a standstill. Thousands of old ranges had outlived their usefulness. They had reached a point where they were kept in service only through the continued efforts of the appliance service crews. These old ranges were not only wasters of gas but they were a source of annoyance and expense to both the users and the company. They had to be replaced with modern gas ranges if gas for cooking was to maintain its rightful place in the field and if the company was to keep its earning curve on the up-grade as it had been able to do, although in a small way, throughout the previous five years.

Replacement Program

In the latter part of 1934, an analysis showed that there was a market for approximately 18,000 modern gas ranges on our system, and in our budget of 1935 plans were included to replace at least 3,000 of them in a four months' sales campaign.

After the sales program had been perfected and the gas appliance dealers in the city had assured us of their wholehearted support in the activity, we set out on February 25, to replace at least 3,000 old ranges by May 31, and I am pleased to state that the final count showed that the reporting dealers and the company had sold 3,272 gas ranges, of which 2,462, or 75%, were of the modern insulated and automatic heat control types. The percentage of total range sales to total residential meters was 10.7.

To compete in Division Three of the National Gas Range Sales Contest, we selected the 60-day period of March 1 through April 29, and showed on our report to the Association, a figure of 1117 sales, equal to 3.3% of our residential meters. Had we selected the period April 1 through May 30, we would have reported sales of 2155 ranges, equal to 6.7% of our residential meters.

To accomplish such sales results required considerable expense in advertising, personnel and equipment. The campaign

was called the "Good Fortune" Gas Range Campaign, and the theme used was, "It Is Your Good Fortune To Own a Modern Gas Range." Eight trucks, or caravans as they were called, with special bodies were used to take a display of modern gas ranges to the prospect's home. Five ranges were shown on each, and each caravan carried a card on the inside, reading, "Any of these Gas Ranges can be purchased from your dealer." The caravans were manned with four men dressed as fortune tellers who canvassed every prospect on our mains. They sold ranges themselves and obtained prospects for both the company and the dealers which were followed up later by our senior salesmen and the dealers' salesmen. Our salesmen are paid a straight salary which is adjusted twice a year and based upon the amount of estimated annual revenue they produce. They receive as much credit for assisting a dealer to make a sales as for selling for the company.

It was a spectacular selling activity which lent itself nicely to creating dealer interest and support, and it is to the dealers that we give the greatest credit for the results accomplished. Their sales during the campaign period were 2584 ranges, the direct sales made by the company were 688 ranges. And it is for improved relations with the gas appliance dealers in Memphis that our company gives the greatest credit to the National Gas Range Sales Contest, although many other important accomplishments can be attributed to it.

Contest Spurs Dealers

The contest enabled our company to present to the dealers a new and novel inducement to sell modern A. G. A. approved gas ranges.

It was a means of stimulating the interest of dealers' employees in selling modern A. G. A. approved gas ranges.

It caused the dealers to handle only A. G. A. approved ranges. Many of them closed out non-approved makes which were replaced with approved ones. It made many dealers realize that membership in the American Gas Association means something to the gas company as well as to manufacturers. It helped our company to get the dealers interested in other appliance campaigns, and it will make this problem easier in the future. It has made the prize winning dealer salesmen lasting

CHARLES E. BENNETT*Charles E. Bennett*

Charles E. Bennett, chairman of the Commercial Section for the Association year 1935-1936, is president and general manager of the Binghamton Gas Works, Binghamton, N. Y.

Mr. Bennett graduated from the University of Wisconsin in 1912 with a B.S. degree in mechanical engineering. From 1912 to 1915, he was fire prevention engineer for the State of Wisconsin. In 1915 he joined the Madison Gas and Electric Company, Madison, Wisconsin, as superintendent of the gas plant. He was made secretary and treasurer in 1918.

He was employed by the Binghamton Gas Works in 1920 as vice-president and general manager. In 1930, Mr. Bennett held the same position under the Columbia Engineering and Management Corporation in addition to being appointed vice-president and general manager of the following companies: Home Gas Company, Keystone Gas Company, Eastern Pipe Line Company, Reserve Oil Corporation and Consumers Natural Gas Company. From 1931 to date, he has been president and general manager of this group of companies with the exception of the Reserve Oil Corporation, and the Consumers Natural Gas Company, which have discontinued operations.

friends of the company salesmen who helped them in many instances close range sales. Naturally, the good will of the dealer employees toward the company is reflected to their employers.

It has had its effect in raising the quality of gas ranges sold by the dealers. Many of them have voluntarily told us that the demand for better gas ranges has increased since the campaign closed.

The increased demand for gas ranges brought about by the sales activity was the cause of many small dealers in outlying sections of the city adding modern gas ranges to their merchandise displays. Through the assistance given by our dealer contact force, we expect to keep these dealers in the gas range business.

The "back wash" from the campaign has been felt by the dealers whose gas range business has been brisk since the campaign closed. This has made the older dealers

give more prominent display space to gas ranges and they are spending more money than formerly for newspaper and other advertising of gas ranges. Several of the dealers who have specialty selling crews for their electrical appliance departments have included gas ranges in their salesmen's portfolios.

Gas range manufacturers have shown a renewed interest in the Memphis market and many new lines can be seen in the furniture and hardware stores of the city.

We are proud of our dealer co-ordinated sales plan which we feel has improved greatly in the past year. The National Gas Range Sales Contest has helped in no small measure to bring about this condition.

Prizes Are Incentive

It also had its effect upon our sales force during the campaign. As soon as the salesmen were given the details of the contest they made up their minds to go out after first prize. They watched daily sales reports as closely as did the supervisors and sales managers, which interest, of course, kept up the needed enthusiasm in individuals as well as in the entire sales force. The company had also offered substantial prizes for outstanding sales accomplishments during the campaign, which, when kept before the salesmen along with the prizes offered by the American Gas Association, furnished an incentive for outstanding salesmanship. The morale of the salesmen throughout the campaign was as good as any sales manager could expect, and that the same fine spirit persists is due in part to the company's winning 1st prize in Division Three and to the distribution

among dealer and company salesmen, of the substantial sums of money awarded to individuals.

Other accomplishments which mean a great deal to our company can be credited to a successful range sales activity, and since the National Gas Range Sales Contest played an important part in bringing about this result it is entitled to its share of the credit. Approximately 11% of the ranges in use on our system are new and modern cooking appliances. Appliance service calls have been reduced proportionately.

These satisfied users will, without a doubt, prove to be a medium for the best kind of advertising obtainable, the word of mouth kind. An improved market for modern gas ranges should exist in Memphis for a number of years.

Summed up, the National Gas Range Sales Contest has had a beneficial effect upon our company in many ways:

- 1) It has improved our relations with our customers.
- 2) It has stimulated interest in sales activities among all of our employees.
- 3) It has strengthened our dealer co-ordinated sales program.
- 4) It has helped to develop a better market for modern gas ranges.
- 5) It has demonstrated that the housewives of Memphis prefer natural gas to any other fuel for cooking.
- 6) It has assisted in reducing our operating expenses.
- 7) Last but not least, it has assured us that we may expect a growing business from the sale of natural gas for all domestic purposes.

Home Service Activities at the Convention

*Margaret Nevins*

THE home service breakfast Wednesday, October 16, was the highlight of home service activities at the A. G. A. convention in Chicago. An attendance of one hundred was made up of home service directors, sales managers, and representatives of outside business concerns and magazines.

Following the greetings of P. S. Young, president, and Alexander Forward, managing director of the Association, Margaret Nevins, chairman of the Home Service Committee, introduced F. M. Rosenkrans, chairman of the Commercial Section, who in his remarks stressed the place which home service work has come to fill in the sales promotion activities of a gas company.

In a symposium on home service activities, the following directors participated: Helen Smith, Rochester Gas & Electric Corporation; Ruth Kruger, The Bronx Gas & Electric Company; Helen Diamond, Minneapolis Gas Light Company; Mildred Clark, Oklahoma Natural Gas Company; and Lulu Tregoning, The Kansas City Gas Company. In the absence of Mrs. Anna J. Peterson, Mrs. Eunice Noyes and Vivette Gorman in the home service department of The Peoples Gas Light & Coke Company of Chicago presented her assignment on "Value of New Platform Kitchens." Helen Smith emphasized househeating sales promotion through the services of a skit. Others outlined special activities under way, such as cooperation with the service department, spreading home service over a wide territory, and sales floor demonstrations.

On Tuesday afternoon, in a program devoted to home service subjects, Mrs. Clara Gebhard Snyder of the Institute of American Poultry Industries discussed "New Methods of Poultry and Egg



Home service breakfast meeting at Chicago

Cookery." John Normile, representing the Better Homes & Gardens magazine of Des Moines, Iowa, presented a cross section of information collected by household magazines on the subjects of water heating and refrigeration.

On the Commercial Section program,

W. C. Grant of the Lone Star Gas Company of Dallas, Texas, pointed out to the sales managers present the many avenues to sales covered by home service work. Good will for the company, said Mr. Grant, is another valuable asset created by the home service department.

Advertising and Dealer Plans Increase Range Sales

By WM. E. LEVERETTE

Commercial Manager, Nashville Gas & Heating Company, Nashville, Tenn.

CONFRONTED with Tennessee Valley Authority and Electric Home and Farm Authority competition, the Nashville Gas and Heating Company, Nashville, Tenn., has been forced to find many ways and means of selling gas service. That the methods adopted have been effective is illustrated by the results achieved.

The company tied in with the National Range Campaign but did not make a particularly impressive showing during the period of the campaign for the reason that it had been necessary to campaign continuously for the entire twelve months' period. The net result has been that in so far as the cooking load is concerned, the gas range sales in the city of Nashville are slightly over 200% for the same period last year.

Continuous selling pressure has netted the company over 1,000 additional customers for the year. In addition to the increase in customers and more gas range sales, the gas sendout has ranged from 10 to 18 per cent increase each month of this year. Water heating, space heating, commercial and industrial sales have also shown a slight increase, although the emphasis has been on building up customers and not losing to competitors.

About every three months we attempt

some special campaign to restimulate interest in gas for cooking purposes.

A new departure in our advertising is an unusual method of using newspaper space. In a special issue of a local newspaper, a part of every page was devoted in some way or another to gas publicity, both news and advertising, but the aggregate space used did not exceed one full page. This special issue was the result of getting together with the dealers and advertising simultaneously with them. The company aimed to cover every reader of the local paper regardless of what his particular interest might be.

Dealer Set-up Successful

The results were most gratifying in that the sales were good for both the company and independent dealers. For the first time in the history of the dealer relation set-up, the independents are selling more ranges than we are, and at the same time our sales are exceeding those of last year.

We feel quite proud of this dealer set-up due to the fact that up until twelve to fourteen months ago, there were practically no gas ranges handled by any furniture or other stores in Nashville. We believe that the dealers are sold on our merchandising idea. We have meetings from time to time to discuss all phases so that we may know what they are doing, as well as to find out if there is any dissatisfaction on the part of our associates.

Our salesmen are quite well pleased in that they realize by this time that dealers showing gas appliances create business for them, and to say the least, when they lose a sale, they lose it to a dealer selling our product rather than a competitor's. In line with this, we have not found it necessary to pay bonuses to our salesmen on dealer sales.

A series of advertisements run during the summer showed gas as the all-season cooking appliance. Without being critical of our competitors, we conveyed the fact that electricity is good for summer use, kerosene for fall and spring, coal and wood for winter, but the modern gas range covers all four seasons.

At the present time we are working on an advertising theme—"Breakfast in 6 Minutes"—to show definitely the speed of gas and its real time saving effects.

A test breakfast has been prepared in the presence of dealers, their salesmen, and our own salesmen, which consists of six eggs medium scrambled, six slices of crisp bacon, six slices of crisp toast and six cups of coffee in the Silex coffee maker. This test is run as follows: All materials are set out on the table including the cooking utensils. The time is set and the cook begins everything including breaking the eggs, placing the bacon in the pan, toast in the oven, filling Silex with both coffee and water. The longest time of any test was six minutes, 35 seconds. We feel that this breakfast-in-six-minutes idea is so definite that it brings to the mind of the housewife a meal that nearly always requires a minimum of time.

All in all we are finding that women are funny enough to decide for themselves what method they believe best for everyday cooking. As long as the women continue to do the cooking in their own way, we believe that gas will always predominate. From our own experience with the ladies, we think they will continue to decide that the use of gas saves real time, effort and money.

INDUSTRIAL GAS SECTION

C. W. GALE, Chairman

C. W. BERGHORN, Secretary

RALPH L. MANIER, Vice-Chairman

Raising the Public's Evaluation of Gas



F. H. Adams

I APPRECIATE very much the invitation and opportunity to address the Industrial Gas Section. The subject—"Raising the Public's Evaluation of Gas"—is certainly one which the manufacturer of gas-burning equipment and anyone from the gas utilities should be able

to discuss with a complete mutuality of interest and a recognition of the common importance of such an objective.

Looking back not so many years I recall vividly that, in the judgment of many leaders in the gas utilities, there was a great danger that industrial heating would go electric in spite of the sound economics and advantages of gas. Recalling the enthusiasm of the electric companies around 1924, and the number of manufacturers of utilization equipment who were enthusiastically selling electric heating equipment, recalling the position of electric furnaces in those industries manufacturing finished products, particularly the automotive and auto accessory industry, and recalling the public enthusiasm over the idea of "doing it electrically," there was good reason to feel that while gas might be a good horse it would be left behind in the race for leadership, due to the lack of a well co-ordinated program for adequately developing and promoting the utilization of gas.

Picture Has Changed

It is needless to dwell on the fact before the Industrial Gas Section that the dreams of the electrical industry did not materialize. This Section has been responsible, more than any other group, for the change we have seen in that picture.

The Surface Combustion Corporation based its future on the soundness of the analysis that gas was a superior fuel in most heating operations. We have had no reason to change that opinion.

Perhaps the best indication of the progress we have already made in raising the public's evaluation of gas service is obtained from an examination of the pub-

By FRANK H. ADAMS

Surface Combustion Corp., Toledo, Ohio

lic's use of that service. I am indebted to the Statistical Department of the A. G. A. for the following data showing the trend of industrial and commercial consumption of gas and electricity from 1929 to 1934, inclusive. Taking 1929 as a base of 100, the sale of both manufactured and natural gas dropped off until it reached a bottom in 1932, when the index of sales was 77.5. Electric energy sales dropped from an index of 100 for 1929 to a low in 1932 of 77.0. In 1934 gas sales had increased to an index of 101.5 while electricity increased to an index in the same year of 87.1.

Gas Service Extended

This analysis is made on the basis of cubic foot volume. On the basis of B.t.u.'s, the showing for gas would be more impressive because there has been a considerable replacement of manufactured gas by natural gas during this period. While some adjustment might properly be made in these indices, due to the displacement of other fuels, made possible by the extension of natural gas lines, the fact, nevertheless, remains that the use of gas service has been greatly extended in all fields requiring heat, both domestic and industrial. So much for the past accomplishment.

In considering the subject before us, it seems there are two points it is well to fix in our minds as a background for this discussion.

First: In considering any sales problem and our subject is primarily a sales problem, it is well to remember that the public has no direct interest in your product. The public is interested in the values it obtains from the use of your product. Your product is simply a means to an end.

You are really not selling gas—you are selling gas service. Our product is not furnaces and appliances, it is heating performance. While gas is your product and equipment is ours, we are really selling the public exactly the same product—the service of a piece of equipment fired with gas—a service which is the combination of equipment plus gas. So, incidentally, the subject of this paper really should be "Raising the Public's Evaluation of Gas Service" rather than just gas.

Second: When we discuss the question of raising the public's evaluation of gas service, it seems entirely pertinent to ask, "What values are you going to ask the public to evaluate? What values are you going to sell?"

Gas service can mean many things and a part of every manufacturer's problem, in trying to balance equipment values against cost, is that in the range of cost of gas from the manufactured gas in the east to the dump gas in the mid-continent there is a wide range of opinion in the gas industry on this question of values.

Gas can be and is sold on a comparable B.t.u. cost with coal and oil. But it lends itself to the development of many values which coal and oil do not have. How many of these values are you going to sell and deliver? The higher the rate the greater the necessity of capitalizing these values. However, almost regardless of rate, it is necessary to sell the superior values of gas and the equipment to deliver them, if the public's evaluation of gas service is to be increased above a B.t.u. equivalent with less refined fuels.

Good Equipment Vital

It is important to remember that after a customer puts in a piece of equipment, whether you recommend it or not, he then begins to evaluate gas service on the basis of his own experience. In too many cases, if the cost is too high, there is only one thing wrong: the rate is too high, the value of your service is discredited.

In discussing this with a natural gas company executive some time ago, he said, "We are not interested in how our customers use gas—that is their responsibility. We will set a rate so they cannot afford not to use it." Well, if that is the viewpoint, then I might close our discussion here by giving a simple answer—lower the rate. Certainly your customer stands a small chance of putting any greater evaluation on gas service than you sell him and sell him the equipment necessary to deliver those values.

So I repeat that one question which must be given consideration is: What values are you going to sell and deliver to your customers?

With these two points in mind: first, that the customer is interested in the service rendered by a product rather than the product itself; and, second, that he evaluates this service on the basis of the values

you sell as measured by his own experience, it is evident that utilization equipment must play an important part in the values delivered to the customer and in any plan for increasing these values. Looking back I think we can agree that the development of better utilization equipment and a better application of combustion and furnace principles to specific production problems has played an important part in past progress and is equally important in the future.

The progress of the industries you serve demands new equipment development and new applications. Out of these demands or opportunities, whichever you choose to call them, come new lines of equipment. Out of such opportunities has come with us, in the past few years, an entire new line of atmosphere furnaces for bright annealing, clean hardening, and continuous carburizing. In part, as a result of the demands in that field, there has come an application of diffusion combustion for the firing of radiant tubes. This application in the steel industry promises to revolutionize sheet annealing practice with the old in and out box annealers. Direct fired air heaters for conditioning make-up air for entire floors in automobile body plants instead of segregated areas has met with wide industry acceptance in the past two years. Our own sales in these three developments alone have accounted for a rated gas consumption of over 500,000 cu.ft. of 1000 B.t.u. gas per hour. So new uses have been created for gas service, new values established, and additional load sold.

Competitors Progressing

Competition forces equipment development because after all your competitive position is relative—rarely static. I wonder how many in the gas industry fully appreciate the advantage they have had in the past due to the lack of an adequately supported and coordinated research program by the oil industry on the utilization of oil.

However, the advantage is rapidly decreasing. During the past few years, competitive fuels have made real progress towards recapturing industrial loads which the gas industry had taken by hard work from these fuels. Part of this has been due to lower competitive fuel costs; part to a curtailment of constructive activities of the gas industry during the depression; part to an increasing aggressiveness of competing fuel industries in coordinating their efforts to improve utilization equipment and service.

So one of the important factors in increasing the public's evaluation of gas service is in coordinating the efforts of the gas industry to promote adequate research and development of new and better utilization of gas. We need to give serious thought to how research can be encouraged and coordinated so that as effective an effort as possible will result from the resources within our control.

The two principal sources from which you can look for the major contributions are your A. G. A. research committee and the manufacturers of utilization equipment. The former needs no comment here. It has done splendid work. Its work should have the active backing of every member in the gas association.

I would like to discuss, in more detail, the contribution the manufacturer of utilization equipment can and should make, if he has the gas industry's co-operation. If his effort is not encouraged by your support, if it is not coordinated with your objectives, one of the best resources for research and development is ineffective.

Manufacturer's Position

First: To be most effective development of new equipment must either be carried on by the manufacturer or very closely coordinated with and through him. Development work should be closely coordinated with production and sales responsibilities. To be successful the answer must be salable and the wide practical contacts and experience of the production and sales functions of the manufacturer should be the basis of the

judgment upon which depends, to a large degree, the direction and efficiency of development work.

One important reason for this is that development work, as I am looking at it, does not end until you at least have a satisfied customer and even then you may be far from industry acceptance.

Whether you call it laboratory work, experimental work, field test or sales promotion it is all development which involves pioneering, capital expenditure, and business risks. It does not end, particularly on industrial equipment, with the production of a piece of equipment which the engineers hope can be sold. The responsibility must be followed through to see that the values which it is supposed to create become actualities in the customers' use. This responsibility can best be carried by the manufacturer.

In this program strictly laboratory work has a very definite part. Many phases of a program can best be isolated and handled by special personnel concentrating on that phase. But the place where that phase and the answer fits must be definitely determined and correlated in the main program.

Second: If this thesis, as to the manufacturer's position in development, is as sound as I think it is to the improved evaluation of gas service then the gas industry can well give consideration to those policies in its relationship with manufacturers which will increase the effectiveness, and encourage and support a maximum activity on their part.

Research Incentive

Research by the manufacturer must be financed finally out of earnings which are a function of volume. Just to the extent the gas industry elects to dissipate its volume, just to that extent does it destroy the means and incentive for research by the manufacturer.

Don't consider this point with the thought that this is an advertisement for business for the Surface Combustion Corporation. I mention it because an improvement in the understanding and co-operation with the manufacturer is one of the greatest opportunities you have for improving research activity and improving gas service. At a time when we come together here to seek an over-all industry viewpoint and see if we are overlooking any bets, then it is important to call attention to the need and opportunity.

If goods are bought at a loss, if cash resources are used up by demands for consignments, special financing, and similar temporary advantages, then cash simply isn't available for research and other items of service which seem to me pay the gas industry much greater dividends over any period of time.

If every manufacturer is encouraged, for either political or price bargaining reasons, to copy equipment which has been pioneered by those who have spent

CHARLES W. GALE



Charles W. Gale, newly elected chairman of the Industrial Gas Section, is new business manager of the Knoxville Gas Company, Knoxville, Tennessee.

Charles W. Gale

Mr. Gale is a native of Atlanta, Georgia, and a graduate of Benson Institute of Technology, Portland, Oregon. In 1923 Mr. Gale joined the Doherty organization as industrial fuel sales engineer for Public Service Company of Colorado at Denver. He remained with that company, advancing to superintendent of the industrial gas, commercial gas and district steam heating division, until this year when he became new business manager of the Knoxville Gas Company.

Mr. Gale's experience includes not only the sale and utilization of both manufactured and natural gas, but also the solution of problems in connection with the changing over on a large scale from manufactured to natural gas.

He is author of a number of articles in technical and gas trade journals and has been active in the American Gas Association.

time and money to develop new uses and values for gas service, then the offsetting disadvantage is not just that these pioneering manufacturers have less to invest in further activities of this type but that they must work from a shorter and shorter time viewpoint and play safe on the small investment and quick turn. Fundamental research cannot be carried on in that atmosphere. By the same standards as you seek to merit the increasing business of industry should you rate the contributions of the manufacturers who are endeavoring to render a service to you.

The influence of rates in increasing the public's evaluation of gas service is always important. I am not going to discuss the question of whether rates are too high or too low or the form of rate structures which have a vital effect on industry's use of gas service in competition with other fuels. This is not within the scope of this discussion.

It is relevant, however, to emphasize the relationship between what you may do to raise public's evaluation of gas service and the rates. The best support I know of for gas rates, regardless of their level, is to establish an evaluation of the service in excess of the cost of the service. The more you can increase that value the more secure the rates and, incidentally, the better your public relations.

This value is one thing you can discuss with your customers which he can understand. To argue about issues which may be very important as to your legal rights before a public utilities commission is, at its best, negative selling to your customer. E. M. Tharp has covered this so well in his paper on "Executive Responsibility for Sales Promotion" presented before this convention in 1933 that I refer you to that for any elaboration on this point.

Inferior Service Costly

It is too bad that there isn't some easy way of showing management the effect on rate reductions or load lost of the lack of values delivered to the customer due to poor utilization equipment and inferior service. As an example of this I was discussing once with an industrial salesman for one of the gas companies, the question of employing a consulting engineer to work on a problem of industrial heating in a process using large quantities of gas in a way which left considerable room for improvement. He said his general manager would not approve that expense and would criticize him for not being able to solve the problem himself. Later, in following up how he came out on a demand of this customer for a decreased fuel cost, he said he hadn't done anything with the utilization problem. His general manager thought the best way to hold load was to cut rates so he had played up the reasonableness of the customer's demands and when he settled with the customer for only half of the reduction demanded the

manager complimented him for doing a good job. A \$1,000 expenditure for improving service was out but a \$10,000 reduction in gross revenue from this customer was perfectly satisfactory.

There are several morals in this, perhaps, but the one I want to emphasize is an evident lack of appreciation of the relation between the values of utilization which can be raised by intelligent action and the rates.

An increase in efficiency of utilization may mean a loss in gas send-out for that particular load, but so long as the public is buying value the volume of your market is finally determined by the relation of that value to cost and an increase in value is equivalent to a decrease in rates. An authentic value is realized only when something of established worth is sold at a lower cost. But you must first establish your standard of quality.

Management's Problem

The quality of merchandising, the competency of your sales and service organization will always be a determining factor in the public's evaluation of gas service. It is easy to say the gas company should have well-trained personnel with engineering background and selling ability who can clearly interpret the requirements of the industrial customer and do a sound sales job.

I often wonder, however, whether the management of many gas companies fully appreciate the complexity of their industrial sales problems and, therefore, can coordinate all the factors which are necessary to properly build and maintain the value of gas service.

One thing they should understand is that while an industrial salesman must have an engineering background his major requirement and responsibility is that he be a good salesman. It is necessary that the gas company have men who can give adequate service and who know enough of the various processes using heat to understand their fundamental requirements. Management should understand, however, that the industrial salesman cannot be a specialist in the heating problems of every industry the company serves and consider it is the duty of the salesman to bring in the best experience available on any unusual utilization problems at the proper time.

It might be helpful to make a list of all the industries on your lines and the heating applications in each industry. See how much time and experience it would take to learn the technical information necessary on each one to discuss it adequately with the plant management who have been spending all their time on their particular process problems. Such information and experience is necessary if you are going to discuss with industry the values of your service in which they are primarily interested and show them how they can realize greater values.

Don't confuse this point by assuming that I think the manufacturer should be called in to do this work for you and,

incidentally, sell his equipment. The problem is one of understanding and correlating the facts and presentation necessary to do an adequate, economical, and creditable selling job. The more of that job the industrial gas salesmen can do, the better we, as manufacturers, like it. If both the manufacturers and gas companies' representatives are competent, there isn't any stronger or more efficient sales team you can have than this combination. Neither alone can do as good a job.

Your management must understand that you must have the time and the assistance to make the contacts with your customers which anticipates his troubles and his needs. There is too much eleventh hour scrambling to change opinions and conditions that have been growing up over a long period of time. A good salesman knows whom to contact, what sales resistances have to be met in time to adequately meet them rather than to be able to pull a rabbit out of a hat the last minute to meet a problem which was not anticipated.

In many cases better results could be obtained if the sales effort were better organized. Every sales department should have clearly in mind its major potentials at existing rates. Out of the opportunities in your territory what ones are worth most to your company?

Adequate Survey Important

If I were running a gas company one of the first things I would do would be to have a survey made of every heating operation on my lines. I would get all the information necessary to rate these operations in the order of their importance to the company giving consideration to:

1. Net to the company considering both the volume of load which could be sold and the rates which could be obtained.
2. Desirability of load considering necessary equipment investment, equipment available, and the advantages of gas as compared with competing fuels.

From this analysis I would list, in order of their importance, the various heating operations in the city. From this list I would select the first ten, twenty or whatever number I could properly handle and concentrate on those to the exclusion of all others, except as circumstances made it advisable or necessary to consider some of the other items.

Why this particular plan? You would get one answer if you could sit in our office and see some of the inquiries which come in to us. Of all the prospects a man has in his territory, it would seem that if he had looked for the worst one he could find, a special operation loaded with grief, no potentials, no advertising value if 100 per cent successful, a beautiful engineering problem but of no commercial advantage. Why spend time and energy on jobs like that when all around are jobs that by comparison would be

far easier to sell and bring more credit to gas service? Those are the kind of jobs an intelligent salesman knows how to gracefully sidestep.

Such a plan gives direction; it conserves energy and time. It permits concentrating on the jobs which mean most to your company and should mean most to you. It means more successful jobs in operation. It gives you time to study your important jobs and time to work out an effective and competent selling effort. It prevents spreading your sales effort too thin.

It should be unnecessary to mention adequate service to your customers as a means of increasing the value of gas service. There should be a regular schedule of service calls to every customer on your lines. Use these calls, and your salesmen's calls, not only to make sure your customers are getting as good service as possible from the equipment they have but also to get as much of the following information as possible.

1. Get acquainted with his heating problems. Try to find out where the production bottle necks are, in what lines he is liable to expand, where better gas service will help him. Watch particularly where better product quality in heating operations will be valuable.
2. Find out who makes the decisions relating to production and the improvement and purchase of equipment. Get acquainted with these men. Study how you can give them little services which help them with their problems.
3. Build up their confidence in you and your service so that as soon as they begin considering changes or expansions you will be in the picture. Get in early enough so you have time to properly study the problem and prepare yourself.

Quality Policy Pays

There isn't so much in this list of things that requires an outstanding engineer. It isn't an engineering job—it is a salesman's job. If you know whom to see, can find out what he wants to know, can find out when he wants to know it, you have the most important information you need.

I have already mentioned the importance of utilization equipment. There should be some definite policy as to the quality of utilization equipment you sell and how any equipment is going to be sold to your customers—not as something vaguely understood but as a definite sales policy. Forget that you are selling gas and sell gas service with the equipment which will deliver that service. How many times have you seen men spend weeks selling a prospect on the superior value of gas as a fuel and then encourage him to put in poor utilization equipment which disregards all utilization progress and experience and definitely limits the values which can be delivered?

I fully appreciate the difficulty of selling that additional investment but make sure there isn't more real value in that additional investment than there is in the lower investment and that increased values you want to sell do not lie in that increased investment. Too often the statement that the customer won't spend the money is simply an alibi of poor salesmanship. A price complex is the surest index of a poor salesman.

It seems to me we must sell these values or the alternative is a tail spin into a hopeless position. The lower the rate the less the capitalized value of the saving which can be invested in equipment, the poorer the equipment, the less the development of the intangible values of gas as compared with other fuels, the more you are at the mercy of the B.t.u. price of those fuels. You are finally blocked in a corner with a low rate on one side so that if you saved all the fuel it wouldn't mean much and on the other side by poor utilization equipment entirely inadequate to give the customer even a fundamental appreciation of what he can do with a superior fuel service such as you can furnish.

Sacrificing Values

Whatever the quality of equipment used, the customer should be told what values he is sacrificing by using poor equipment. Too many customers are left with the impression that any equipment they put in will be satisfactory just so they use gas. Don't lower your standard of gas service by telling a customer that some gas burners stuck in a furnace designed for oil firing will give a value you can be proud of. It may be expedient to make such a conversion but keep clearly before him what additional values he can obtain by better equipment.

Another factor which you salesmen appreciate, more than anyone else, and which has an important influence in your customer's evaluation of gas service is that it is not enough for just the sales department to be sales minded—the entire organization should be and particularly that part of the organization that has any customer contact. Every gas company employee should be a salesman for his company as one of the leading public servants in the community.

Enthusiasm is contagious. Let us be enthusiastic about our respective companies. Let us tell our customers, prospects, and friends the true facts about our company. Let us tell them about the public spirited men who control the destinies of our companies, about the many and varied industries who have found real and special values in gas service, about the extraordinary care and precaution exercised to maintain uninterrupted service—in short, let us put on display that civic consciousness which each of us knows permeates each of our organizations. Every salesman should have a definite story to tell, a story that fairly rings with sincerity.

Finally, I want to suggest another sales

responsibility you have—selling your own management on the problems, possibilities, and methods of your department. Management, more than ever before, needs to understand its objectives, its policies to further those objectives and how those policies are carried out. It seems that most of the points I have discussed are factors in which the management has a very definite responsibility. The need of research and the policies necessary to secure advancement in new uses of gas service and improved utilization equipment, the appreciation of the relationship between values realized by the customer and rates, the understanding of the industrial sales problem, the policies governing cooperation with manufacturers, the need of adequate service check-up, policies relating to standards of quality in utilization equipment, the need of making all employees sales conscious—all these are management responsibilities.

I might have told you of new values which industries are finding in gas service which offer you new potentials. But it seems to me it is more important to consider the fundamentals upon which the sale of values, old or new, depend. No equipment, however, good or new, is going to sell itself. Whatever romance the public sees in any business, whatever goodwill they have towards any institution, is not a matter of chance but good, hard, well planned and well executed sales effort.

There are values in gas service on which the public has not been sold. You have to sell yourself on these values before you have the courage to go out to your customers. If you don't do this, how can you impress your customer with the sincerity of yourself and your company and the value of your product? You can't do it. As Emerson said, "They will see the mud at the bottom of your eye."

Perhaps we can sum it all up by the story of the simple country lad who made quite a sales record and when asked how he did it he just said, "I hain't lazy. I hain't timid. I believes in what I sells and I jist sells it."

McCarter Medal Applications Limited

IN accordance with a recent recommendation of the Accident Prevention Committee, in the future no applications for McCarter medals will be considered by the committee unless they are received at Association Headquarters within one year after the date of resuscitation.

This new ruling has met with the approval of Thomas N. McCarter, the donor of McCarter medals which are awarded to employees of member companies of the Association who have performed successful resuscitation by the prone pressure method.

Member companies are urged to forward applications for award of this medal as promptly as possible in order that every case may be eligible for consideration by the Accident Prevention Committee.

Book Reviews

American Gas Practice. Volume II. Distribution and Utilization of City Gas.

Professor Jerome J. Morgan of Columbia University, in the second volume of *American Gas Practice*, published early this year, has completed a notable piece of work. The gas industry now has available a standard reference which can be employed for planned educational work, and for amplification of every-day problems; coverage of the technical and economic phases of a highly specialized industry is comprehensive and almost encyclopedic. As in Volume I, each chapter is followed by a sizeable list of up-to-date references appropriately tied into the text that on many occasions have served for both complementary reading and source material.

From the physical point of view this book contains twenty chapters and 1031 pages, including a good index, being substantially about the same size as the first volume. The subject matter, Distribution and Utilization, necessarily covers a vast field from storage through distribution and measurement to new business, rate making and utilization domestic, commercial and industrial, to public relations.

The words "second edition" on both volumes carry a special significance which all readers may not appreciate. These texts were prepared and published chapter by chapter to accompany a course and as a basis for instruction. Naturally such procedure permitted unusually good opportunities for taking advantage of suggestions and corrections as well as for keeping the text in step with new developments. Such an outstanding example is found in the inclusion of material dealing with natural gas, which has created momentous problems of economics and engineering by its increased use. The treatment in Volume II is such as to make it equally valuable to the natural gas man and the man in the manufactured gas industry.

In this writer's opinion it is impracticable, and in fact impossible to "review" the contents of such a book. It can however be said, and well may be repeated, that this work, prepared by a recognized authority, with the assistance of a special and representative committee consisting of A. E. Forstall, consulting engineer, Montclair, N. J.; J. A. Perry, United Gas Improvement Company, Philadelphia, Pa.; F. C. Weber, vice-president, The Brooklyn Union Gas Company, Brooklyn, N. Y.; and W. S. Yard, vice-president, Pacific Gas & Electric Company, San Francisco, Calif., has adequately covered its field. In addition others too numerous to mention here have contributed in a variety of ways. The work therefore presents a true cross section of what is considered good practice in a widely ramified industry on a

great continent which in its turn presents a great variety of engineering and economic possibilities. There is a place for this volume in every technical library as well as on each gas man's desk.

—A. G. K.

OPTIMISM PREVAILS AT CHICAGO

(Continued from page 392)

split Red network of the National Broadcasting System.

Emphasizing the possibilities of the radio program, Henry Obermeyer, chairman of the Publicity and Advertising Committee, in his introductory remarks, said: "Although his voice will go out initially over a regional network, it need not be confined to this area. There is no reason that I know of," he continued, "except our own indifference, why this program cannot be extended into a national hookup and be made available in every territory where people cook or should cook on modern, efficient, gas cooking appliances."

An innovation at this year's convention was the showing of a three-reel sound motion picture film, "A Cycle of Service," produced by the Public Service Corporation of New Jersey. The film, which is a dramatic conception of the vast human energy necessary to furnish gas, electricity and transportation each day of the year to numerous cities, was most favorably received.

In what proved, indeed, to be a "challenge to the gas industry," F. A. Newton, of the Commonwealth and Southern Corporation, New York, and former chairman of the Rate Structure Committee, in an address by that title, presented a vigorous discussion of present-day rate problems. His address is reproduced in full in this issue of *THE MONTHLY*.

The final paper on the general sessions program was presented by George F. Mitchell, president of The Peoples Gas Light and Coke Company, Chicago, on the subject, "Industrial and Commercial Selling."

Stressing the importance of this portion of the gas load, Mr. Mitchell said: "It is not enough that we know where the market for additional gas is or at what prices the gas can be disposed of profitably. To complete the picture we must have a proper sales organization consisting of skilled

executives and highly trained salesmen—specialists, if you please—men well grounded in the fundamentals and enthusiastic over the possibilities for gas in the particular heating field in which they are most adept."

TINY TWINS OF THE BUDGET FAMILY

(Continued from page 409)

Tops which were given out to the youngsters by young women from the Home Service Department. Key men from the company's organization were present to answer questions and explain any of the details of the exhibit which caused queries in the minds of onlookers.

The creation, designing, building, installation and operation of this display was an effort which received the combined enthusiastic attention of the Management, the Personnel Department, Rate and Contract Department, Advertising Department, and the Industrial and Domestic Sales Departments.

Ultimate success of the artistry and the aesthetic appeal of the exhibit depended to a large degree upon those factors which make a window display stop the public and make them want to see more of it. This important activity received the undivided attention of Raymond Clark, and his assistant, Clarence Ocorr, of the Window Display Department.

LAND LEASE ACCOUNTING

(Continued from page 417)

of prepaid rentals. Checks are then signed and released in accordance with mail schedule.

Where payment is on a measured basis, a monthly statement is prepared by the measurement division. This is referred to the land department for filing. In advance of due date of payment, these statements are computed in accordance with lease terms and preparation of check and posting of the payment follows the same procedure as rental and royalty payments.

In comparison with former manual method of land lease accounting, this machine accounting method, which is operating very satisfactorily in Columbia System group offices, has several advantages, of which the outstanding is simplicity of procedure, legibility of records, positive control of payments and records completely proven on a daily basis.

TECHNICAL SECTION

F. A. LYDECKER, Chairman

H. W. HARTMAN, Secretary

MARTIN I. MIX, Vice-Chairman

Review of Developments in Heavy Oil Tar and Emulsion Handling



P. T. Dashiell

AS the title indicates, the purpose of this paper is to bring together and record in one place the more important results of experience of the last six years in the treatment of tar emulsions which are formed in the operation of carburetted water gas plants when using, as a

carburetted agent, oil which is usually called "Heavy Oil." The term "Heavy Oil" means but little and is only used as a matter of convenience. What is really meant is an oil which upon distillation yields a relatively high residuum or coke, i.e., the type of oil which is sold mainly for fuel.

In order to more clearly describe these, the writer has gone somewhat beyond the title and will refer briefly to experience with the formation of emulsion which occurred prior to the general use of heavy oil in water gas production, also he will describe some facts regarding the structure of these emulsions which have recently been brought to light by laboratory research and which make possible very logical explanations of inconsistencies which have arisen in the results obtained in operation of tar dehydrating plants.

Emulsion Defined

The definition of an emulsion and specifically of the water gas tar emulsion, which is the subject of discussion, is given very clearly on pages 567 and 568 of Dr. J. J. Morgan's book "American Gas Practice" and is quoted in part as follows:

"An emulsion is a colloidal or disperse system of one liquid in another liquid. Obviously these liquids must not be soluble to any great extent in each other. . . . The liquid which is in the form of droplets is called the *inner phase* or *disperse phase*. The liquid through which the droplets are scattered is known as the *outer phase* or *dispersion medium*. Since the droplets, as long as they remain separate, partake somewhat of the properties of solid particles, the larger the proportion of the inner phase the more viscous and pasty the emulsion becomes. As it is only necessary for the outer phase to form thin layers between the droplets of the inner phase, it is possible to have emulsions with as much as 90 per cent of

By P. T. DASHIELL

The Philadelphia Gas Works Co.,
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inner phase. To stabilize the emulsion and render it more permanent, an *emulsifying agent* is often necessary. The nature of the emulsifying agent may vary, but is often a finely divided insoluble solid which coats the surfaces of the droplets of the inner phase and prevents them from coalescing or uniting with each other. . . .

"In the tar and water emulsion formed at various points in a carburetted blue gas plant the water is the inner phase and the tar oil forms the outer phase."

Since writing that definition, Dr. Morgan and his collaborator, Dr. Stolzenbach, have published the results of their researches as to the structure or mechanism of tar emulsion and have stated that the emulsifying agent is primarily a hydro-carbon substance which appears in the emulsion as a membrane surrounding the water droplets and preventing their coalescence, that the toughness of this membrane determines the stability of the emulsion, and that the effect of the membrane may be enhanced by the presence of free carbon.

It may be deduced from these facts that the emulsion will remain stable until some force is applied which will break the membranes surrounding the water droplets per-

mitting these to coalesce. When this happens, tar being heavier than water, the force of gravity will tend to send the water to the top and the tar to the bottom of the mass, or, in other words, the emulsion will be destroyed and the two substances will stratify permitting their separation by decantation.

It also follows that, in order to give the force of gravity the best opportunity to work, the viscosity of the tar must be reduced to a minimum. This can best be done by heating the mass to about the boiling point of water.

Simultaneous Condensation

Emulsion is formed by the simultaneous condensation of steam and tar vapors existent in the gas as it enters the wash box of a water gas set and the continuation of this in the condensers and relief holder.

It has been suggested by some observers that the emulsification of the tar and water is aggravated by sudden cooling of the vapors and that its formation can be lessened by gradual cooling. It is quite obvious, however, that with the usual design of water gas plant, condensation cannot be gradual enough to make much difference in the rate of formation or character of emulsion. The major causes of formation are quite apart from this.

The formation of excessive quantities of



Combination of stills and processing tanks—capacity approximately 30,000 gals. of dry tar from 50% water emulsion

emulsion is not a new experience and is not related to the use of so-called "Heavy Oil" although it is true that with many types of heavy oil all of the tar produced will appear in the form of emulsion. With many types of gas oil and with the best operation a very large proportion of the tar may appear in this form and dry tar cannot be produced from the emulsified portion by simple settlement.

The writer's first experience with the production of objectionable quantities of emulsion dates from about 1906 when using a gas oil which originated in the southwestern United States. It seems pretty certain that gas oils originating in the Central and Eastern States, such as Ohio and Pennsylvania, could be cracked in a water gas set without the production of serious quantities of emulsion. It has been many years since such were available to the gas industry in any great quantities. It is certain that emulsion formation became a problem at the same time that oils of southern and far-western origin came into general use in the water gas business. The northern oils are usually of the paraffin base type, the southern and western oils are of asphaltic base or mixed base type. It is probable then that any oil of asphaltic base,



Battery of stills fitted with decanting apparatus—capacity 25,000 gals. of dry tar from 50% water emulsion

when cracked in a water gas set, will produce emulsion to a considerable extent. There is also much evidence to show that, with gas oil, operating conditions have much to do with the proportion of the total tar make that appears as emulsion.

Reference is made now to the report of a committee of the American Gas Association, 1928, on the matter of emulsion formation and tar dehydration, and particularly to that portion of it contributed by S. C. Schwarz of Portland, Oregon, in which he states that the presence of uncracked petroleum oil with the tar greatly increases the rate and stability of emulsion production and gives a very logical description of the reason.

In the same volume of the American Gas Association Proceedings can be found a paper by L. J. Willien on the same subject in which he offers the same opinion and suggests that the increase in capacity of the modern water gas set, resulting in shorter time of contact between oil vapors and the cracking surfaces, is largely responsible for the increased prevalence of emulsion formation and difficulties in tar recovery in many works.

Undercracking Causes Trouble

The writer's own experience, covering a period of a good many years in four different plants, clearly indicates that undercracking of the oil for whatever reason it may occur will greatly aggravate emulsion troubles. Undercracking may be brought about by a number of causes—such as too low a temperature of checkerbrick—dirty checkerbrick—excess steam which may be due to too high a rate of steam input or too shallow a fuel bed or to blow holes in the fuel bed, or too short time of contact of the oil vapors with the heating surfaces.

It has also been clearly demonstrated that it is practically impossible to obtain optimum cracking conditions throughout a run in a water gas set and that therefore even with the best operation possible some of the oil will be undercracked and therefore some of the stabilizing agent for emulsion formation will be produced. The quantity of such stabilizing agent need not be relatively large to bring about the production of large quantities of emulsion.

Therefore, it is clear that, when using asphaltic oils, while emulsion formation may be to some extent controlled by proper plant operation, it cannot be prevented.

As the days have gone by when this emulsion can be dumped into any river or

buried or taken out to sea and as it is now recognized that tar emulsion contains usually sufficient tar to make its recovery worth while, it is obvious that a tar dehydrating plant is today a necessary adjunct to every water gas plant whether it uses heavy oil or gas oil of the types available in large quantity, that is asphaltic base oils.

There is no doubt but that the use of heavy oil brings about a tar dehydration problem more acute than gas oil. The reason is fairly obvious:

1. Most of the heavy (fuel) oils are residues or semi-tars resulting from the distillation of asphaltic crude oils.
2. Except in plants designed especially for heavy oil operation, some of the heating surface of the set has to be given up to vaporizing the oil preparatory to cracking and high capacity is demanded, all of which tends toward undercracking at least some of the oil.
3. The tars yielded by most of these oils are extremely viscous and this tends to increase the stability of the emulsion.
4. The "reforming" of oil vapor by passage through the fuel bed increases the viscosity of the tar and generally aggravates the problem, due perhaps to increase in free carbon and its effect as a secondary stabilizer of the emulsion.

Tar Recovery Simple

Nevertheless today sufficient is known of the technique of breaking these heavy oil tar emulsions to make tar recovery a comparatively simple matter. The heavy oil tars when recovered are just as valuable, and for some purposes more valuable than the tars from gas oil. A tar dehydrating plant is an absolute necessity in any water gas plant which is going to carburet with heavy oil. The technique of handling, pumping and storing viscous tars must be thoroughly understood or else difficult situations will result. Many different types of apparatus for the breaking of tar emulsion have been tried out and a large number have been more or less successful.

When attempts are made to compare their operating results a good deal of confusion has resulted from the fact that the tar emulsions made in different plants or at different times in the same plant vary much in character and stability. Consequently results obtained in operation of the tar dehydrating plants vary, not only in different works, but often in the same works, so much so that many times results gotten during a given period cannot be reproduced during another period. A design of apparatus which apparently works well at one time may be completely unsuccessful at another.

The reasons for the variation in the stability of these emulsions are not fully understood at this time, nor can a definite prediction be made as to the stability of emulsion which will be formed in cracking a given oil from the recognizable characteristics of that oil.

Important facts have, however, been brought out as to the structure of tar emulsion by the research work of Dr. Morgan and Dr. Stolzenbach, an account of which

F. A. LYDECKER



F. A. Lydecker

F. A. Lydecker, who has been elected chairman of the Technical Section, is general superintendent of gas distribution of the Public Service Electric and Gas Company,

Newark, N. J.

After graduation from the Stevens Institute of Technology in 1907, a year was spent with the Thompson-Starrett Construction Company in New York City. In 1908 he joined the Public Service Corporation of New Jersey as a cadet engineer in the gas department. He advanced through various distribution positions until 1917, when he became engineer of distribution of the company's Essex Division.

In September, 1922, Mr. Lydecker became assistant general superintendent of gas distribution, and in July, 1926, he was made general superintendent of distribution with the Public Service Electric and Gas Company, which position he now holds.

He has been active on numerous technical committees of the Association.

was published in the A. G. A. MONTHLY for July and August, 1934, to which reference has already been made in this paper.

Accepting the fact that the water of the emulsion is in minute drops, contained in membranous sacs of some hydrocarbon material, and that the problem of breaking the emulsion is simply that of destroying or bursting these sacs, it is clear that that effect is obtained to some extent by all the forms of dehydrating apparatus which have been operated with any measure of success, that the measure of success of each type is determined by the force which it can bring to bear for the destruction of these sacs, related to the resistance of the membranes to that force.

These membranes are certainly harder to break in some emulsions than in others. Whether this is due to the physical character of the material of the membrane or to the size of the water droplet is not clear. If the first theory is accepted, that is, that different oils produce emulsifying agents of varying toughness, then varying stability of emulsion can be attributed to some unrecognizable qualification of the oil. If the second is correct, the variation in stability of emulsion can hardly be attributed to characteristics of the oil, but must be related to variations in operating conditions. At any rate, the objective to be reached is that of breaking these membranes and consequently destroying the emulsion at as great a rate as possible with the lowest cost.

The effect of heating tar emulsion has been known for years. It has also been known that with heating any agitation of the mass by almost any means will result in some stratification.

Structure of Emulsion

We are all familiar with the fact that rubbing a drop of emulsion in the palm of the hand or on a piece of glass or gently paddling some of it in a beaker will result in the separation of some water. The same effect may be gotten on a larger scale by passing warm tar emulsion between two rotating discs set very close together on a shaft somewhat as is done with lubricating oil in a thrust bearing—likewise if hot emulsion is sprayed through a nozzle against a flat surface or allowed to flow over a corrugated surface. Even moving hot emulsion through pipe lines from one tank to another followed by quiet settlement will result in the separation of some water.

With a knowledge of the structure of tar emulsion that we now have, it is easy to see why this must be the case, but it is also clear that apparatus designed to operate on the principle of merely breaking the membranes by friction or rubbing can be commercially successful to only a very limited degree, for two reasons—(1) because the force tending to break the membranes is only sufficient to break the weakest ones, (2) because the effect is not long enough sustained to prevent reformation of the membrane enclosed droplets.

The effect of heating emulsion in cooking or processing tanks has been known for

some time. F. B. Parke, of Brooklyn, last year gave a very clear description of results gotten with a plant which was a combination of such tanks with a set of steam stills. He brought out the fact that a very considerable amount of separation could be gotten in the tanks when the emulsion in the tanks was kept at a certain temperature, 195° F. It is to be noted at this point that such a temperature could be maintained in an open tank with high water content emulsion only if that tank was relatively high and well lagged. The success obtained here is obviously due to the fact that heat and pressure, due to the depth of the tar in the tank, produced forces sufficient to break the membranes and that the effect was long enough sustained to keep breaking them until a large percentage of the water could find its way to the top.

Varying Stability

It is also apparent that a certain proportion of droplets could not be broken by the forces available in the tanks and these, in order to produce dry tar, had to be exposed to still greater disrupting force which was gotten by further increasing the temperature of the partially broken emulsion in a still and driving off the remaining water as steam.

In a system such as this, the effect of the varying stability of the emulsion under treatment makes itself felt in the variation in extent to which commercial dehydration can be accomplished in the processing tanks. The less stable the emulsion the greater the extent to which dehydration can be obtained in the tanks and the less the quantity of water which will have to be distilled. Variation in stability of emulsion may be so wide, however, that the operation of a plant like this may show at times practically no dehydration accomplished in the tanks and all in the stills and at other times just the reverse. Of course, breaking emulsion by heating and decantation is cheaper per gallon of dry tar produced than by distillation.

Now consider another type of dehydrating plant consisting entirely of stills, but with each still equipped with apparatus for decantation when that can be done. The same effect can be gotten and its operation is subject to exactly the same variation in results. But bear in mind that in each case, the still is entirely effective in producing commercially dry tar—the treating tanks without the use of the stills may or may not be.

Now consider a third type of apparatus, such as is described by S. C. Schwarz in the A. G. A. committee report of 1928. This apparatus provides for heating emulsion to a much higher temperature than can be done in open treating tanks, by doing that in a closed tank built to stand pressures of about 75 lbs. At, say 50 lbs. pressure the temperature can be brought up to 298° F. and at 75 lbs. to 320° F. After maintaining these conditions for a period of time, the pressure is released and a certain amount of separation will have taken place.

The principle is exactly the same here as

in the open tank system, but here the disrupting force exerted on the water bubbles is greater due to the higher temperature obtained. It is logical to expect that this sort of treatment will break emulsion which cannot be broken in an open tank system. Its effect might be so far reaching that no steam stills would be required.

It is claimed for this system that the process of destroying emulsion is materially assisted by the addition of a very small amount of caustic soda or soda ash for the purpose of reducing the friction between the surfaces of the tar and water. It is also claimed that the operating costs of this system are low because no distillation takes place.

Attention however is called to this point—When a tank of emulsion is brought under pressure to a temperature of, say, 320° F. and then that pressure is released, distillation of the water and lower boiling fractions of the tar is bound to take place to a considerable extent. If the tar contains even a small percentage of low boiling fractions, these will be lost unless the pressure tank is allowed to blow off through a condenser.

The cost of such distillation as does take place, which is proportional to the total heat in the emulsion under pressure, is just the same as if the work had been done in a still.

There is another method entirely distinct from the heat treatment methods by which tar emulsion may be destroyed and dry tar and water separated. This method uses centrifugal force which apparently breaks the water bubbles and at the same time separates at once the tar and water due to their difference in gravity, causing the separation so quickly that the bubbles cannot reform.

Applying Centrifugal Force

Some methods of applying centrifugal force are relatively weak ones and will work to a commercial degree of success only on unstable types of emulsion. Only a very high speed centrifuge can be expected to give good results with stable types of emulsion such as have come within common experience. The weaker methods may, however, be valuable adjuncts to a still system or to a high speed centrifuge plant just as an open treating tank may be. They may provide all the plant necessary just as open treating tanks may do in a situation where dehydration to a commercially dry basis is not required.

Conditions and requirements as to extent to which dehydration must be carried vary so much in different situations and even at different times in the same situation that it would be futile to attempt here to make a definite statement as to what type of dehydration plant is the best.

With a thorough understanding of the principles involved an intelligent choice may be made of one or the other or a combination of portions of the above mentioned types of apparatus. For instance, in plant (A) tar is to be used for boiler fuel only. The expense of installing a battery

of stills could probably not be justified as open treating tanks of sufficient size could usually be depended upon to yield tar of 20 to 25% water content and such can be efficiently burned in boiler furnaces.

On the other hand, plant (B) sells all its tar to a distiller and the latter will accept only commercially dry tar, say, 3% water. It would be impossible to meet this requirement unless, as an adjunct to the treating tanks, stills or high speed centrifuges were provided which could be depended upon to recover the whole make of tar with the required water content.

Plant (C) has a by-product plant of its own and dry tar is distilled in fire stills to various fractions, some of them low boiling oils. The tar entering the fire stills must have not more than 3 to 5% water, therefore, treating tanks alone could not fill the requirements. Low boiling oils are to be produced and it matters little in overall cost whether these are brought off in the steam or the fire stills. Treating tanks will be of use as a part of such a plant, but all their duty can be performed in the steam stills and, therefore, the latter are the prime necessity in that situation.

The total cost of recovery, from emulsion, of a gallon of commercially dry tar will vary with the water content and stability of the emulsion, so that only a general statement of cost of dehydration can be made, and from such evidence as is at hand the cost will vary but little if the same kind of emulsion were dehydrated in any of the three types of heat treating plants discussed above, that is, (1) the combination of open treating tanks and stills, (2) stills equipped with decanting apparatus, and (3) pressure tank method.

Records of operating costs of recovering a gallon of dehydrated tar are given in Appendix I, Columns A, B, C and D, but they are not comparable with each other as the emulsions treated were not of the same character.

Generally speaking and assuming a cost of steam of 30 cents per M lbs. and a 50% water emulsion, 50 cents per hour paid to attendants, the cost per gallon of recovering 2 to 3% water tar should not be over 4/10th of a cent. This includes no interest on plant investment nor overhead other than plant supervision, nor does it include cost of steam to heat and pump viscous tar emulsion before it reaches the dehydration plant, but does include maintenance.

Centrifuging with a high speed machine, such as the Sharples Rotojector, will certainly give excellent results as far as actual recovery of dry tar is concerned. Based upon a quite elaborate test made with one of these machines in 1934-35, the cost of recovery of a gallon of dry tar, including the same items as above, is somewhat less than with the heat treating systems. A record of the results obtained is given in Appendix I, Column D. The cost is comparable with those shown in Appendix I, Column B (2 and 3), as the types of emulsion treated were very similar.

Attention is called to the fact that this type of machine is equipped with an inter-

mittently self-cleaning bowl. This is a great convenience, but the sludge which comes from the bowl must be disposed of. With the type of tar used in the test runs, the sludge amounted to 5.9% of the tar recovered. It may be burned as a very low grade liquid fuel, but duplicate burners, one using a fuel oil and the other the sludge, are required because the sludge burner cannot otherwise be kept burning.

Types of Stills

The operation of several different types of stills has been described in the literature at various times.

A good arrangement of still, for continuous operation, should show lower operating cost than any batch still, because in continuous distillation heat exchangers, both vapor to emulsion and dry tar to emulsion can be easily arranged without unduly complicating the apparatus. The heat exchangers need not be so large as in batch still operation. In batch still operation heat exchangers are difficult to arrange without very much complicating the apparatus, in fact when their first cost is considered their use will hardly pay.

A very ingenious set-up for continuous distillation was described in an article by A. H. Zane of the Astoria Light, Heat & Power Company in a paper read at the 1935 Production Conference. Although no costs are given in the article, these evidently should be low, as heat exchangers are used and, due to use of automatic controls, the attendance is reduced to a minimum.

The stills used in the Philadelphia Gas Works have been described on several occasions, and many of similar design are used in various works. They are very similar to those described last year in Parke's paper describing the dehydrating plant at the Citizens Works, Brooklyn. Their construction and operation is extremely simple. They operate at batch stills without heat exchangers.

One of the drawbacks in their operation has been a tendency to foam if they are pushed for capacity. This tendency does one of two things—it either slows up the operation or requires increased attendance. Recently this trouble has, to a great extent, been corrected by the installation of a large dome, 5 ft. in diameter and 6 ft. 10 in. high, on the top of each still, from which the vapor line is taken off, and an automatic steam control actuated by the pressure within the still.

The foaming or flashing of the still is caused by rapid evolution of vapor when steam is applied at a high rate. The vapor, in forcing its way through the tar, increases the pressure in the still and causes the whole charge to lift and pass over to the condenser. When this action starts, a prompt reduction in steam input will check it before a boil-over occurs. The automatic control takes care of this. The result is a reduction by 50% in the cost of attendance and at least 50% increase in capacity.

Recent tests have shown a total cost of dehydrating emulsion, containing 35% water, of 2/10th of a cent per gallon of dry

tar produced. Again, this cost is not comparable with others quoted because the emulsion treated was not of the same character.

Installation Cost of Dehydrating Apparatus

It is impossible to make a definite statement as to installation cost per gallon of daily dry tar production capacity of dehydrating plants, first, because so few have been built completely new, and second, because daily capacity varies so with the character of the emulsion treated.

After a careful study of available data it has been found that the cost of heat-treating plants, based on tar emulsion charging stock containing 50% of water and assuming tar of commercial dryness as the final result, that is 3% water maximum, will run from \$1.30 to \$3 per gallon of daily dry tar capacity.

The estimated cost of a proposed centrifuge plant using Sharples Rotojectors, and including the Rotojectors, filters, necessary building, piping, pumps, etc., was \$2.50 per gallon of dry tar capacity.

These figures will serve to show in a general way the cost of dehydrating plant equipment.

Pumping and Storage of Viscous Tar and Emulsions

As to the handling, pumping, etc. of viscous tar emulsion and still more viscous dehydrated tar within the plant and for shipment, tanks which contain tar emulsion or dehydrated tar must be equipped to heat their contents and keep it hot, at least hot enough to lower the viscosity to a point where it can be pumped without unduly high pressures, not over 150 to 175 lbs. This can be done very well in tanks of capacity up to 200,000 gallons by the use of grid steam coils on the floor of the tanks. Above that capacity an outside heater and circulating pump with hot return line to the tank offers a great advantage over the internal heating coil. Lagging of tanks is advisable. Pipe lines for the transfer of viscous liquids must be generous in size, well lagged, and must either be designed to be kept hot continuously by wrapping a small live steam pipe inside the covering or must be designed so that they may be blown partially clear throughout their whole length after each pumping, by use of compressed air.

Barges or tank cars used for transporting viscous tars must be equipped with heating coils or must, when filled with hot tar, be discharged before the hot cargo can cool to a point where its viscosity will make it impossible to pump. With proper equipment there is little difficulty in handling tars of an actual viscosity of 500 seconds, Engler, measured at the pumping temperature. To explain this a little more clearly—A heavy oil water gas tar, which has an Engler viscosity, 50 cc. at 40° C. (104° F.), of 1,000 to 1,200 seconds, would have to be heated for easy pumping to about 130° F. under which condition its viscosity would be about 500 seconds. A heavy road binder base too viscous to handle in an Engler

apparatus at 40° C. (104° F.) will have an Engler viscosity at 190° F. of about 500 seconds and must be heated to that temperature for easy pumping.

Appendix II shows a tabulation which, as the title indicates, was made for the use of the Philadelphia Gas Works Distillation Plant force for pumping and storing heavy water gas tar resulting from the use of fuel oils in the water gas plant, and other materials handled in the operation of the tar distillation plant. The data given in this appendix has been very useful in the operation of the plant.

In concluding this paper the writer recommends that in the coming year specific study be made of the little understood causes of the variation in stability of heavy oil tar emulsions. In other words, to get the answers to the following questions:

1. Is the stability of the emulsion due to character of the hydrocarbon which is the emulsifying agent, or is it due to the size of the water droplets dispersed throughout the tar?

2. Is the stability of tar emulsion dependent upon some quality of the oil used in carburetting water gas or is it due to conditions of operation of the water gas plant, or to both?

The answers to these questions might very well lead to methods of oil selection or to methods of operation which would prevent the formation of objectionable quantities of this material, and enable the operator to recover dry tar from the water

gas plant as it was common practice to do when gas oil of the paraffin base type was the usual carburetting material.

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APPENDIX I

OPERATING COST OF DEHYDRATING TAR IN CENTS PER GALLON OF DRY TAR

These costs are not all comparable one with the other, because the type of Emulsion handled was not the same. Columns 2, 3 and 4 are comparable and also 2, 3 and 4 with 7 are comparable. All costs are computed to a basis of steam at 30c per thousand pounds.

	(A) Open tank heaters for primary separation followed by steam stills		(B) Steam stills with arrangement for decanting		(C) Heating in a closed tank under pressure		(D) Sharples Rotojector
					Gas Oil Tar	Oil Gas Tar	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Pounds steam per gal. dry tar	5.2	7.2	8.5	5.7	4.5		1.3
Steam cost	.156	.21	.255	.171	.125		.039
Labor cost	.160	.18	.121	.054	.080		.145
Soda					.037		.017
Maintenance							.070 (Electric)
							.067 (Estimated)
							.067 (Sludge loss)
Total	.316	.39	.376	.225	.242	.500	.338
% Water in wet tar	47.6	50	55	35	70		50

- (1) Six months' actual cost.
(2) One year actual cost with the labor corrected to include N.R.A. (no automatic pressure regulator).
(3) One month actual cost without automatic pressure regulator.
(4) One month actual cost when using a steam still equipped with pressure regulator.
(5) American Gas Association Proceedings 1928—Page 1343.
(6) W. H. Wardale in "Western Gas"—September 1930.
(7) Test of one machine on a commercial scale.
NOTE: With the exception of Column (D), the total costs do not include maintenance, but this item on the equipment referred to above would be very small.

APPENDIX II

VISCOSITY OF VARIOUS MATERIALS HANDLED IN P.G.W. AND THE SAFE PUMPING TEMPERATURES OF EACH

Tars	Engler 50 c.c. Seconds											Saybolt Furol 60 c.c. Secs.	Est. Pumping Temp. ° F.
	15.5° C. (60° F.)	25° C. (77° F.)	40° C. (104° F.)	50° C. (122° F.)	60° C. (140° F.)	70° C. (158° F.)	80° C. (176° F.)	90° C. (194° F.)	100° C. (212° F.)	110° C. (230° F.)	120° C. (248° F.)		
Gas Oil Tars													
a	183	99	43	30	24							50	
b			24									45	
c			15									45	
d			25									45	
Fuel Oil Tar													
e			1663	663	306	175	84	53				130	
ei			1098	575	275	140	75					125	
es				472								120	
ez							530					180	
Horizontal Retort Tar													
f (Wet)					1530	850	480	275	170			175	
g (Dry)					1350	650	325	185	105			160	
Coke Oven Tars													
h			395	210	109							95	
k			625	330	177							110	
l			710	375	200							115	
m			650	340	180							110	
Vertical Retort Tar													
n			300									90	
Road Tar Bases													
o					2000	600	285	129	78	47	28	165	
p						1000	530	260	130	78	47	180	
q						2000	800	400	220	135	80	190	
r									760	404		220	
Fluxed Road Binders													
s	800	326	107	61	41	26						70	
t		1200	295	160	85	53						90	
u			474	229	132	80						100	
v			710	370	185	110						110	
w			925	510	270	162						115	
Oils													
Gas Oil													
x	70		29								15.5° C./24	50	
Fuel Oils (Various Types)													
1		825	296	150	83	50					40° C./97	90	
2		446	186	115	72	55	40				55° C./130	70	
3		810	320	188	111	66	44				40° C./107	100	
4				660	413	253	155				60° C./138	135	
Asphaltum Oils													
y							640	400	245	147	88	90° C./193	190

REMARKS: It so happens that Saybolt-Furol Viscosities are approximately one third of Engler Viscosity at same temperature.

COOPERATIVE NATIONAL ADVERTISING

(Continued from page 400)

as much to tell Mrs. America that she is not an under-privileged savage if she uses gas in her home, as it will cost our competitors to tear it down. A holding army, a possessing army, never has to put as much force in its defense as does an attacking army.

I find in talking to some of my friends who know all about advertising rates, etc., that for less than one-half million dollars, we can tell our story about the modernity of gas to 14,000,000 people throughout the country in the standard women's magazines with prestige and with all the authority that these women's magazines carry with them. We can tell them that for less than one-half million dollars, eight times—four times in color and four times in black and white in every one of those magazines during the year.

That is not much money for the gas industry to spend.

I want to say here that I think this is the job of the gas utilities and not something to be passed over to the manufacturers. You will sell the ranges, you will sell the water heaters, the refrigerators and the gas equipment in the basement, so you tell the people about it."

Not Manufacturers' Job

I know why that has been done. I know why we have taken that attitude and you know it too. It is because we look at what our competitors are doing, who turn the job over to the General Electric Company and the Westinghouse Company. We have no General Electric or Westinghouse in the gas industry. We have no one great big strong manufacturing company. We have a lot of them; they are good friends scattered all over the country but they are not situated so that they can carry this ball. It is our ball and we have got to carry it.

The only way we can do something about this situation is to tell the people through cooperative advertising, if the gas companies in this Association see the situation as I do. Gas is modern, gas is a service, gas is the best friend humanity has. The air we breathe is gas, the water we drink is a combination of gases. The fuel

we use to operate our automobiles is gas. Just think of the romance of gas! Gas is the most useful thing that man has given to man and it is the most useful product for him to do his heating and cooking with.

But we have the problem of coordinating the ideas of a number of different interests. We have the manufactured gas companies and we have the natural gas companies, and we have the combination companies—those in the gas and electric business.

Roman Riders

The combination companies are like Roman riders, because the politicians claim that they are holding up the electric rates to pamper the gas companies, and the gas company executive claims that the big bosses won't give him a break because they are electrically minded. They are riding two horses, with one foot on the gas horse and the other on the electric horse. I have no quarrel with the electrical industry. They have a wonderful industry, and there are a lot of things they do to the best of their ability, but a good Roman rider would not fatten one horse and let the other starve to death. I say,—let's build up the gas horse and make him fat too.

All of us can agree on one thing, whether we are in natural gas or manufactured gas, or whether we are Roman riders. We can tell America that gas is not outmoded, and America is fast coming to the point where it believes that gas is outmoded, unless we get up and speak our piece. When the country thinks that anything is outmoded, it is on its way out.

I think every man in this audience has the courage and the conviction to know that gas is not on its way out and is resolved that we are not going to let it go out.

Half a million dollars! There are 16,000,000 gas meters in this country, and if 75% of the gas companies can see this problem as we see it, and will put in just four cents per meter, we will have that half-million dollars and we can put on a fine advertising campaign.

I have talked to a few of our friends about this in advance. I have talked to gas men wherever I have met

them, whether friends or new acquaintances. The Los Angeles Gas and Electric Company with a good many hundreds of thousands of meters is willing to contribute its four cents if the industry will come along, so is the Southern California Gas Company and the Southern Counties Gas Company. I talked to an official of the Bylesby Company and they are willing; so is Laclede. The four largest companies in our state are ready to go. I think Bill Winters of Atlanta will.

We have telegrams this morning from the American Power and Light Company, the Louisiana Power and Light Company, the Mississippi Power and Light Company, the Electric Bond and Share Company, the Pennsylvania Power and Light Company, the Superior Water, Light and Power Company, the Western Power and Light Company. These companies can see the picture and they are ready to go. The only reason many others have not indicated their willingness is because we have not gotten around to ask them.

Here is a page from the Saturday Evening Post—a picture of New York many years ago (which I think you have all seen) showing the streets full of telephone wires overhead. That is an advertisement of the telephone company. You can't see anything but wires. However, years of progress have brought many improvements in telephone service.

Let's tell the people what years of progress have done in the gas industry.

I was happy at the reception that was given to this idea, which is not my idea. It is not the Pacific Coast Association trying to tell the A. G. A. anything, but we are sounding a note. This is not a report of the Italian-Ethiopian War. We are out there in the front line trenches where hydro-electricity has been given more momentum, romance and political significance than it has in other parts of the country, but it is your war and it is coming back to you.

Let's go.

Appointed Superintendent

Henry G. Goldschmidt, Jr., has been appointed superintendent of the gas plant of the Peoples Light Company, Davenport, Ia.

Personnel Service

SERVICES OFFERED

Public Relations: advertising, publicity, complaints, public contacts, editing of employees' magazine, photography, six years. Industrial development and research; all details including surveys of various cities, towns and counties. Compilation and editing of data, marketing surveys, economic studies, four years. Merchandising; systematizing and coordination. 968.

Manager-Executive—18 years' practical operating experience in all phases manufactured gas industry. Technical; university training. Particular emphasis and success in merchandise sales, load building, public relations; desires connection with straight gas utility in general or sales management capacity. Go anywhere; (40) married. 969.

Engineer—Nine years in gas industry. Now employed as manager of small property. Desires position as Assistant Engineer of large property or industrial gas sales work with appliance manufacturer. 970.

Ambitious advertiser, 31, seeks position where initiative coupled with varied experience in industrial and public utility fields may command recognition. Knowledge accounting, statistics, business administration, security sales work and record keeping. 971.

Mechanical Engineer; thorough research and production experience in all phases of manufactured gas distribution. Knows modern meter work (tin and iron) from treating leather to improving fast meter records; elimination of gum, etc. troubles; customer contact; languages, desires responsible position in distribution or with manufacturer; U. S. or foreign (31), married. 972.

Graduate Chemical Engineer desires position with operating or holding company, where six years' experience manufacturing coal and water gas, two years' experience operating meter repair shop and complaint department, and one year with house heating sales and engineering experience, can be of material assistance in lowering cost. 973.

Engineer, thoroughly experienced in appliance problems with manufactured and natural gas, desires position with manufacturer or gas company. Record includes ten years' research work in laboratories of national scope, five years' development of domestic appliances and controls; also sales. 975.

Executive, with many years' experience in the gas industry; graduate in Mechanical Engineering with practical experience in gas plant design, plant construction and maintenance. Thorough knowledge of operating, new business relations, industrial fuel and house heating applications. 976.

Distribution Superintendent—Gas Engineer. B.S. and M.S. degrees, major in Gas Engineering. Four years' "dirt" experience high- and low-pressure distribution operation; two years' distribution superintendent of industrial territory (23,000 meters) including meter repair, appliance department. Completed Alexander Hamilton modern business course. (30). 977.

Gas Engineer (37). Early technical training chemical engineering, nine years' chemical research gas analysis, fuels and gasoline absorption. Eight years' active in gas engineering in charge of plant construction, inventory and appraisal valuations. 978.

Engineer with utility accounting experience. B.S., M.E.E.; postgraduate work. Three years' research assistant, National Industrial Conference Board. Twelve years' gas and electric utility experience, rates, franchises, cost allocations, contracts, research in utility management problems. Experience with P. S. C. accounting. (N. Y.). 979.

Controls and gas burner engineer wants position offering greater possibilities. Has several years' practical work in design, application and operation thermostatic and gas mixing controls or mechanical and electrical types, and gas burners all types. Fundamental training and experience, combustion, metallurgy, mechanics and electricity. 980.

Sales Engineer having specialized in the sales and promotion of automatic gas water heaters for over 10 years. Planned and conducted many successful sales campaigns. Well acquainted with gas companies, plumbing supply houses and have arranged many eastern plumber dealer setups. 981.

SERVICES OFFERED

Specialist in problems pertaining to efficiency, operation and maintenance; well grounded in the fundamentals of fuel production, transmission and distribution. Have proven record for load building, new business and fuel application. Experience also covers appraisal, rates, selling and public relations; graduate engineer. 982.

Accounting, Cost and General. Eight years' experience; gas plant, transmission and distribution system construction and operations analyzed. Ascertainment of cost, accounting of same determined in conformity with utility and public service commissions requirements. Field records gas works and main systems audited and accounting and statistical reports compiled. 983.

Assistant Superintendent of coal gas plant desires position with a coke oven or coal gas plant in supervisory capacity. Three and one-half years university training in civil engineering; eight and one-half years' experience in coal gas plant. Familiar with plant construction work. (29) Married. 984.

Presently employed. Available thirty days. Do you need a gas man who can get results? I am willing to prove it by a year's trial. Experienced thirteen years in gas business sales promotion, making friends, boosting sales, creating company good will; can help sales force get new business. 985.

Manager. 20 years' experience managing water gas properties. 5 years' experience managing natural gas property. Experience includes all phases including distribution, new business and public relations. 986.

Manager or Superintendent. Twenty years' practical experience handling properties having up to 4,000 meters. Water or coal gas plants. Have had good success in rebuilding run down properties. Would take living wage and share of profits, married (50). 987.

Engineer experienced in following: Operation—coal and water gas plants—distribution and service department. Design—several water gas plants with equipment—coal gas condensing and purification equipment—high and low distribution systems. Construction—complete water and coal gas plants—re-modeling plants; distribution. 988.

Research Chemist—Several years' experience in a coke plant together with research and development work for a leading research corporation. Familiar with analyses of by-products and routine analytical methods. Now employed but desire a change. 990.

Utilization and Sales Engineer long experience New York Metropolitan and adjacent area in house heating, water heating, restaurant and industrial work. Testing installation and servicing. 991.

Gas Engineer desires new connection. Graduate chemical engineer. Fifteen years' experience in design, construction, operation and maintenance of Water Gas Plants and high-, medium- and low-pressure distribution systems. Able assistant large, or manager medium size property. 992.

Gas range and Appliance salesman seeking substantial connection. Thoroughly experienced and capable of handling any territory. Have the ability to supervise and perform sales promotion duties. Will locate anywhere, no preference as to territory. Interested in salary and expenses or drawing account, commission and expenses. 993.

Gas Engineer. Ten years operating all types of plants, various capacities from cadet to superintendent. Six years, gas manufacturing equipment company, last three chief engineer. Three years with public service commission, valuation engineer. Experience ideal for holding or operating company engineer. 994.

Sales Manager—Sales Promotion Manager—Salesman—competent, aggressive, experienced,—for gas company or manufacturer wanting successful sales. Appliances, gas merchandise, gas distribution supplies, plumbing, heating specialties. 12 years' effective selling, promoting, advertising, managing volume sales for leading specialty manufacturers. National gas company executive, jobber and consumer contacts. 995.

Office Manager (31) 3 years in company of 46,000 meters, 14 years' experience in clerical and accounting work, will accept position in any capacity—collector, accountant, storekeeper, payroll work, etc. Married. 996.

SERVICES OFFERED

Industrial Sales Engineer—Several years' experience in supervising the sales, installations and maintenance of house heating, industrial steam and water heating. Special training and knowledge derived from long experience with eastern utility companies will be a great asset to any corporation. 997.

Gas minded, practice trained water gas plant man (39). Experience ranged from sole operator 4-foot plant to assistant superintendent of a 3½ million daily plant. Also experienced as general foreman of distribution construction, mains and services. 999.

Energetic efficiency gas man with twenty years' experience, operating and managing, desires change from present position, to that of manager or superintendent of medium sized utility or assistant to manager of large one. Knowledge of sales problems. Single, college, go anywhere. (39). 1000.

Gas Technologist—Young man (34) with broad experience in gas industry as manufacturing and distribution engineer, operator and designer of equipment, desires responsible position where valuable engineering and business experience can be put to use. 1001.

Sales Engineer, thoroughly experienced in new business operations of gas utility, domestic appliances, house heating and industrial application, wants position where there is chance for advancement. 1002.

Engineer (27) B.S. Chemical Engineering 1932; 1-year graduate study. Experience: 18 months automotive industry; 3 months gas pipeline; 22 months gas appliance industry where now employed. 1003.

Sales Supervisor or Sales Engineer. Have had considerable experience in industrial, commercial, house heating and domestic sales work. Also am familiar with design and installation of equipment. Have worked with manufactured and natural gases. University graduate and married. 1004.

Kitchen Equipment Salesman. Desires connection with well-established hotel and restaurant kitchen equipment house. Twenty-five years' experience designing and selling kitchen equipment in and around New York City, through architects and builders. Thoroughly familiar with all gas appliances for heavy duty work in kitchens. 1005.

Thoroughly seasoned and competent sales manager able to handle any or all divisions of commercial and public relations departments. Several outstanding records in water heating, commercial and industrial work. Can get volume business in any territory and produce satisfying results. 1006.

Auditor: Age 30, University graduate in 1927, accounting major. Three years' public accounting on public utility staff, three years with large holding corporation, supervising property accounting for thirty-two gas properties. Assistant general auditor. 1007.

Engineer Superintendent—Advanced engineering degree. General experience: ten years' operation, production and distribution, superintendent of coal and water gas plants; ten years' gas engineer on design, construction and expert operation of production plants; three years in appraisals, reports and property records; also research. 1008.

Graduate Mechanical Engineer desires position in any department, thorough, capable. If you want a live wire who can get results either in distribution, manufacture or sales, glad to arrange personal interview at any time. Natural gas experience. 1009.

Practical and technical gas engineer—thirteen years' experience design, layout, development, estimating, advertising, selling and appraisal of gas plants and equipment. Also competent structural design. Well acquainted with gas industry. 1010.

POSITIONS OPEN

One of the old line water heater manufacturers requires salesman to call on utilities and jobbers. Must have previous experience. Good territories open. 0297.

Large Manufacturer popular priced gas ranges has opening for salesman in two territories midwest and east. State previous selling experience. 0298.

Manufacturer of well-known line of gas water heaters requires distributor who can devote whole time to their rapidly growing business in the New York retail trading area. Experience with sale of gas appliances necessary. Must be acquainted with sales executives of gas companies in that area. Drawing account against commissions. 0299.

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